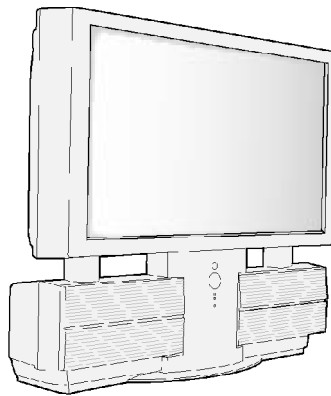


Order No. MKE0204850C1

B2

Service Manual

Multi Media Display
PT-40LC12 / PT-45LC12



SPECIFICATIONS

ITEM	SPECIFICATION	1	2	ITEM	SPECIFICATION	1	2
LCD panels	0.9" Poly silicon TFT LCD Panel X 3 RGB shutter method, using Translucent TN crystal panels	○	○	Audio input signal	0.5 Vrms	○	○
Drive method	Active Matrix 4:3 Aspect Ratio panels, TFT (Thin Film Transistor)	○	○	Audio out	0.5 Vrms	○	○
No. of pixels	921,600 (1,280 X 720) stripe pixels X 3 panels (16:9)	○	○	Broadcast Channels:	VHF 2-13, UHF 14-69		
Lens	F2.3, f13 mm	○	○	CABLE Channels:	Midband A through I (14-22) Superband J through W (23-36) Hyperband AA-EEE (37-64) Lowband A-5-A-1 (95-99) Special CABLE channel 5A (01) Ultraband 65-94, 100-125		
HID Lamp	150 W HID (High Intensity Discharged) Lamp	○	○	Tuner		○	○
Contrast ratio	400 : 1 (Typ)	○	○				
Brightness	650 cd/m ²	○	○				
No. of Colors	16,777,216	○	○				
Display	40 inch, 16 : 9 aspect ratio 45 inch, 16 : 9 aspect ratio	○	—				
Television System	EIA Standard (525 lines, 60 fields) NTSC Color Signal	○	○				
Video input signal	1 Vp-p, sync negative, 75 Ω terminated	○	○	Connectors	S-Video Input: Mini Din 4-pin Video Input: RCA Pin Jack RGB Input: D-Sub mini 15-pin Component Video Input: 3 RCA Pin Jacks Audio Input: M3 Stereo mini Pin Jack	○	○
S-Video input signal	Y (luminance signal): 1 Vp-p, sync negative, 75 Ω terminated C (chrominance signal): burst 0.286 Vp-p, 75 Ω terminated	○	○		S-Video Output: Mini Din 4-pin Video Output: RCA Pin Jack Audio Output: M3 Stereo mini Pin Jack		
RGB input signal	Video signal: RGB Analog (0.7 Vp-p, 1.0 Vp-p with sync on green, 75 Ω) Sync signal: H/V separate, H/V composite H-Frequency: 31.47 kHz-68.68 kHz (TTL Level) V-Frequency: 56.25 Hz-66.06 Hz (TTL Level)	○	○	Speaker	2 Speakers 20 W [10 W + 10 W] (10 % THD)	○	○
Component Video input signal	Y: 1.0 Vp-p, with sync, 75 Ω P ₃ P ₂ : ±0.35 Vp-p, 75 Ω V-P ₃ P ₂ Signal: 480 i H-Frequency 15.73 kHz V-Frequency 29.97 Hz 480 p H-Frequency 31.47 kHz V-Frequency 59.94 Hz 720 p H-Frequency 45.00 kHz V-Frequency 60.00 Hz 1080 i H-Frequency 33.75 kHz V-Frequency 30.00 Hz	○	○	Power Source	AC 120 V, 60 Hz	○	○
				Power Consumption	Power ON: Approx. 280 W Power OFF: Approx. 3 W (When cooling fan is stopped)	○	○
				Operating Condition	Temperature: 0 °C-40 °C (32 °F-104 °F) Humidity: 20 %-80 % (non-condensing)	○	○
				Weight	42 kg (92.6 lbs.) 44 kg (97.0 lbs.)	○	—
				Dimension (W x H x D)	970 mm x 898 mm x 415 mm (38-3/16 inch x 35-3/8 inch x 16-5/16 inch) 1,061 mm x 978 mm x 415 mm (42-9/16 inch x 38-1/2 inch x 16-5/16 inch)	○	—

1. PT-40LC12
2. PT-45LC12

Weight and dimensions shown are approximate.
Designs and specifications are subject to change without notice.



1. SAFETY PRECAUTIONS

1.1. GENERAL GUIDELINES

- 1. For continued safety, no modification of any circuit should be attempted.**
- 2. Disconnect AC Plug before disassembling this unit.**
- 3. It is advisable to use an isolation transformer in the AC supply before servicing.**
- 4. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
- 5. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers, shield, and isolation R-C combinations etc. are properly installed.**
- 6. After servicing, be sure to restore the wires, leads, insulation barriers, shields, etc.**
- 7. After servicing, make the leakage current checks to prevent the customer from being exposed to shock hazards.**

Caution:

Use a separate Isolation Transformer for this unit when servicing.

1.2. LEAKAGE CURRENT COLD CHECK

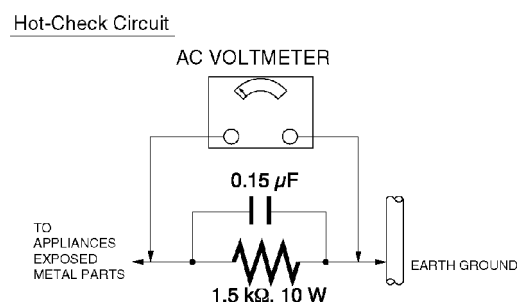
- 1. Unplug the AC cord and connect a jumper between the two prongs on the plug.**
- 2. For physically operated power switches, turn power on. Otherwise skip step 2.**

3. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screwheads, connectors, etc. When the exposed metallic part has a return path to the chassis, the reading should be between $1\text{ M}\Omega$ and $12\text{ M}\Omega$. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

1.3. LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly into the AC outlet.
Do not use a isolation transformer for this check.
2. Connect a $1.5\text{ k}\Omega$, 10 W resistor, in parallel with a $0.15\text{ }\mu\text{F}$ capacitor, between each exposed metallic part on the set and a good earth ground, as shown in Figure 1.
3. Use an AC voltmeter, with $1\text{ k}\Omega/\text{V}$ or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 V RMS .
A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks. Leakage current must not exceed $1/2\text{ mA}$. In case a measurement is outside of the limits specified, there is a possibility of shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

Figure 1



1.4. UV-PRECAUTION

1. Be sure to disconnect the AC Plug when replacing the lamp.
2. Since the lamp reaches a very high temperature during its operation, wait until it has completely cooled off when replacing the Lamp Unit.
3. The lamp emits small amounts of UV-Radiation.
Avoid direct-eye contact by covering the Lamp and wearing the UV cut protective glass.
4. The high pressure lamp involves a risk of explosion. Therefore, do not touch the Lamp Bulb when servicing.

Figure 2



This product has a High Intensity Discharge (HID) lamp that contains a small amount of mercury. It also contains lead in some components. Disposal of these materials may be regulated in your community due to environmental considerations. For disposal or recycling information please contact your local authorities, or the Electronics Industries Alliance: <<http://www.eiae.org>>

2. PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and

wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

CAUTION :

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

3. OPERATION GUIDE

4. SERVICE NOTES

5. DISASSEMBLY/ASSEMBLY PROCEDURES

5.1. CABINET SECTION

5.2. LARGE VIEW FOR DISASSEMBLY/ASSEMBLY OF CABINET

6. SERVICE FIXTURES AND TOOLS

7. TROUBLESHOOTING HINTS

8. BLOCK DIAGRAMS

9. SCHEMATIC DIAGRAMS

9.1. SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES

9.2. INTERCONNECTION SCHEMATIC DIAGRAM

9.3. FRONT JACK SCHEMATIC DIAGRAM

9.4. RGB JACK / OPERATION SCHEMATIC DIAGRAMS

9.5. AUDIO POWER / LAMP THERMISTOR / FRONT THERMISTOR / LAMP COVER SWITCH SCHEMATIC DIAGRAMS

9.6. WAVEFORMS

10. CIRCUIT BOARD LAYOUT

10.1. FRONT JACK C.B.A. / RGB JACK C.B.A. / OPERATION C.B.A.

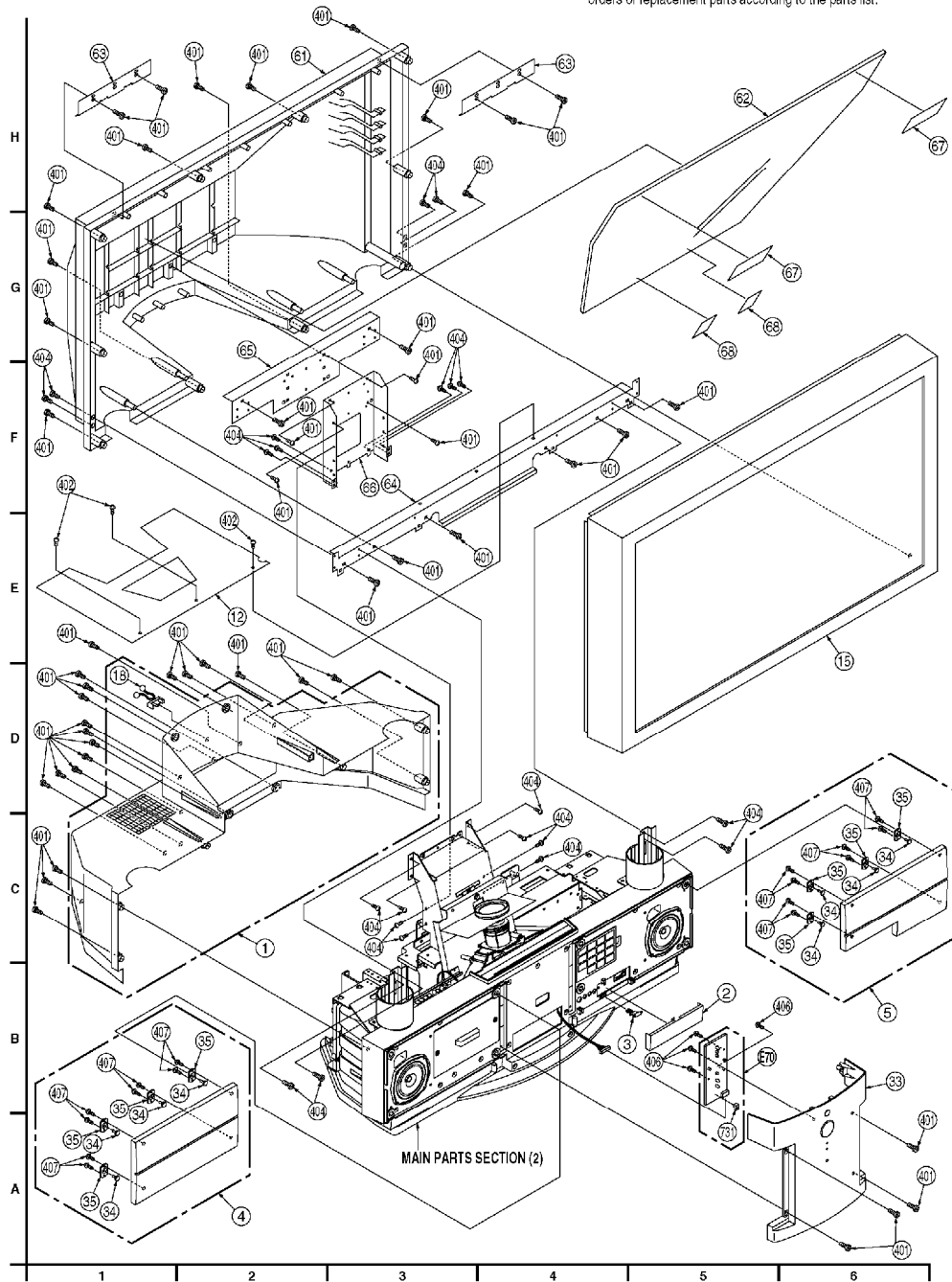
10.2. AUDIO POWER C.B.A. / LAMP THERMISTOR C.B.A. / FRONT THERMISTOR C.B.A. / LAMP COVER SWITCH C.B.A.

11. EXPLODED VIEWS

11.1. MAIN PARTS SECTION (1)

1 MAIN PARTS SECTION (1)

Note: Parts with no Ref. No. in "EXPLODED VIEW" are not supplied.
And some Ref. No. will be skipped. Be sure to make your
orders of replacement parts according to the parts list.




11.2. MAIN PARTS SECTION (2)

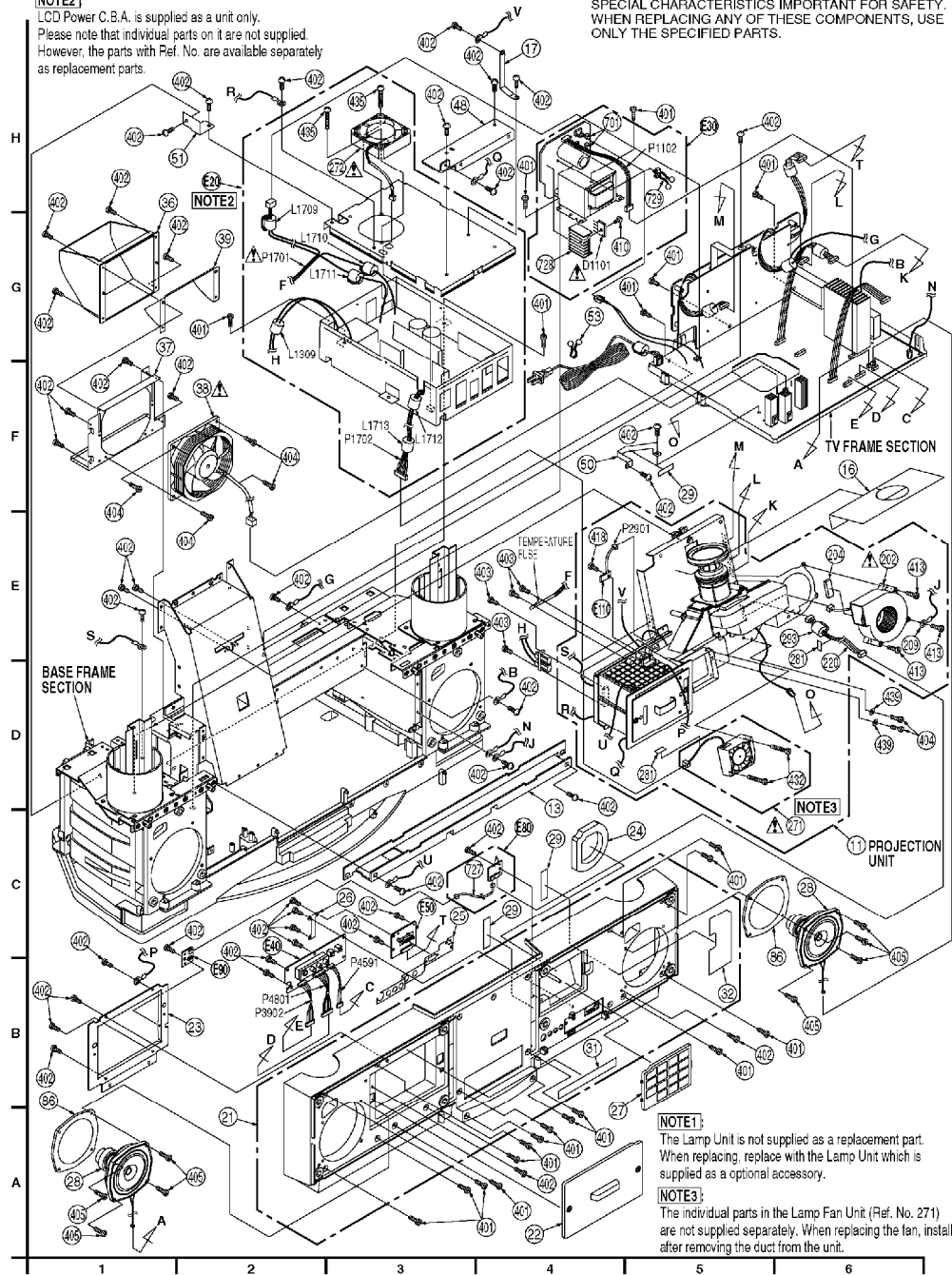
2 MAIN PARTS SECTION (2)

NOTE2

LCD Power C.B.A. is supplied as a unit only.
Please note that individual parts on it are not supplied.
However, the parts with Ref. No. are available separately
as replacement parts.

IMPORTANT SAFETY NOTICE

COMPONENTS IDENTIFIED BY THE SIGN  HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.



BASE FRAME SECTION

TV FRAME SECTION

PROJECTION UNIT

NOTE2

NOTE1

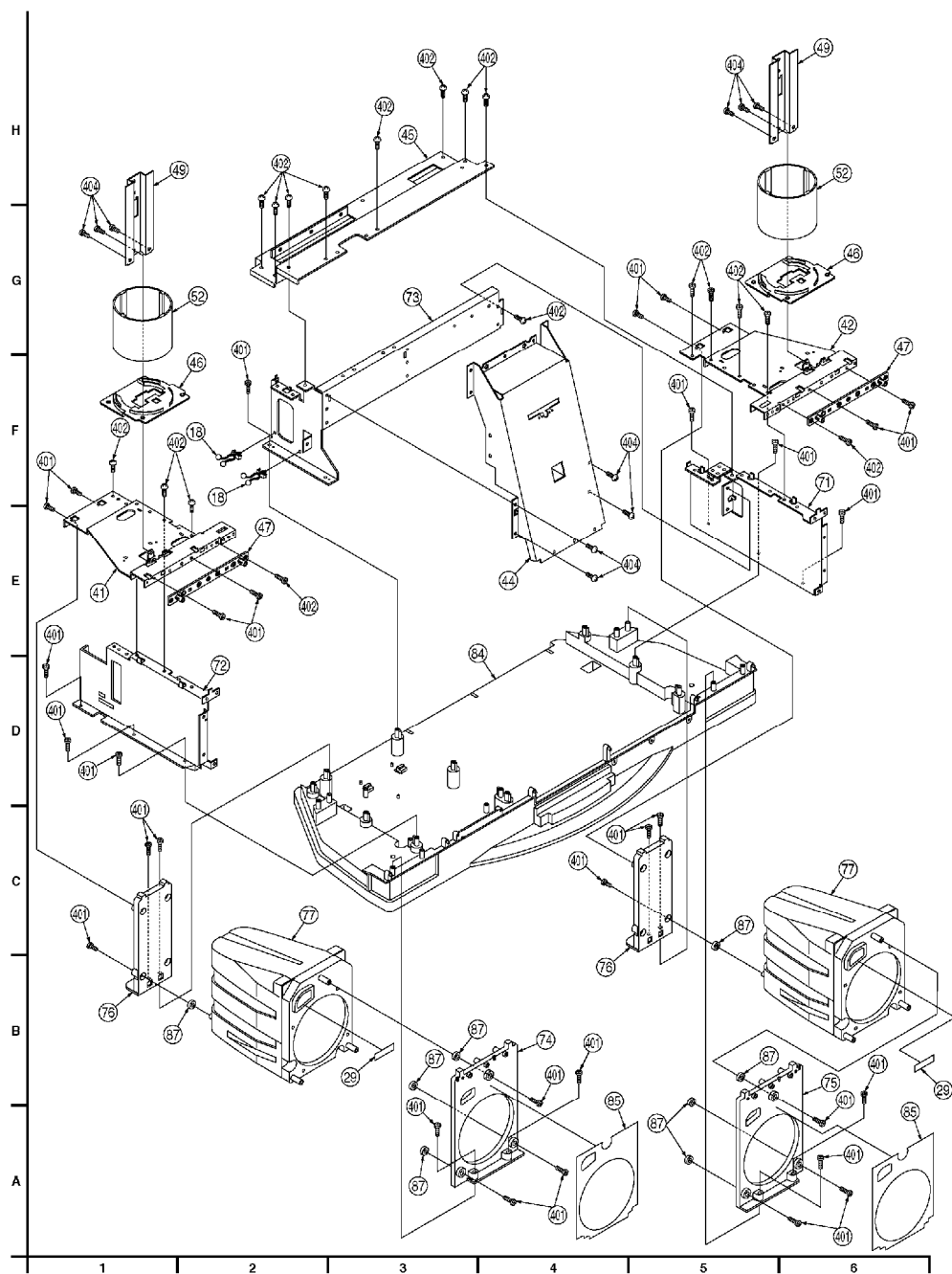
The Lamp Unit is not supplied as a replacement part.
When replacing, replace with the Lamp Unit which is
supplied as an optional accessory.

NOTE3

The individual parts in the Lamp Fan Unit (Ref. No. 271)
are not supplied separately. When replacing the fan, install
after removing the duct from the unit.


11.3. BASE FRAME SECTION

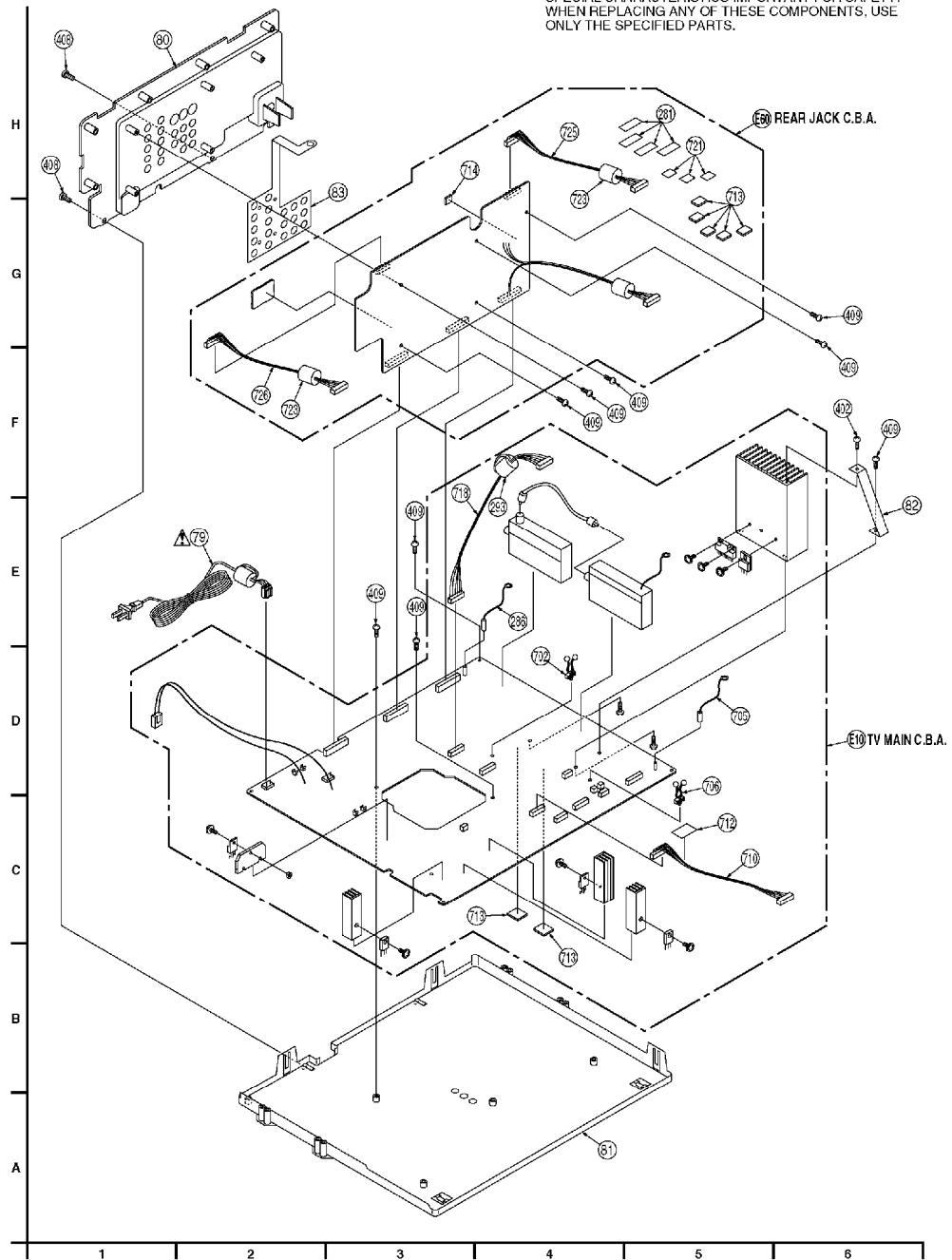
3 BASE FRAME SECTION



11.4. TV FARME SECTION

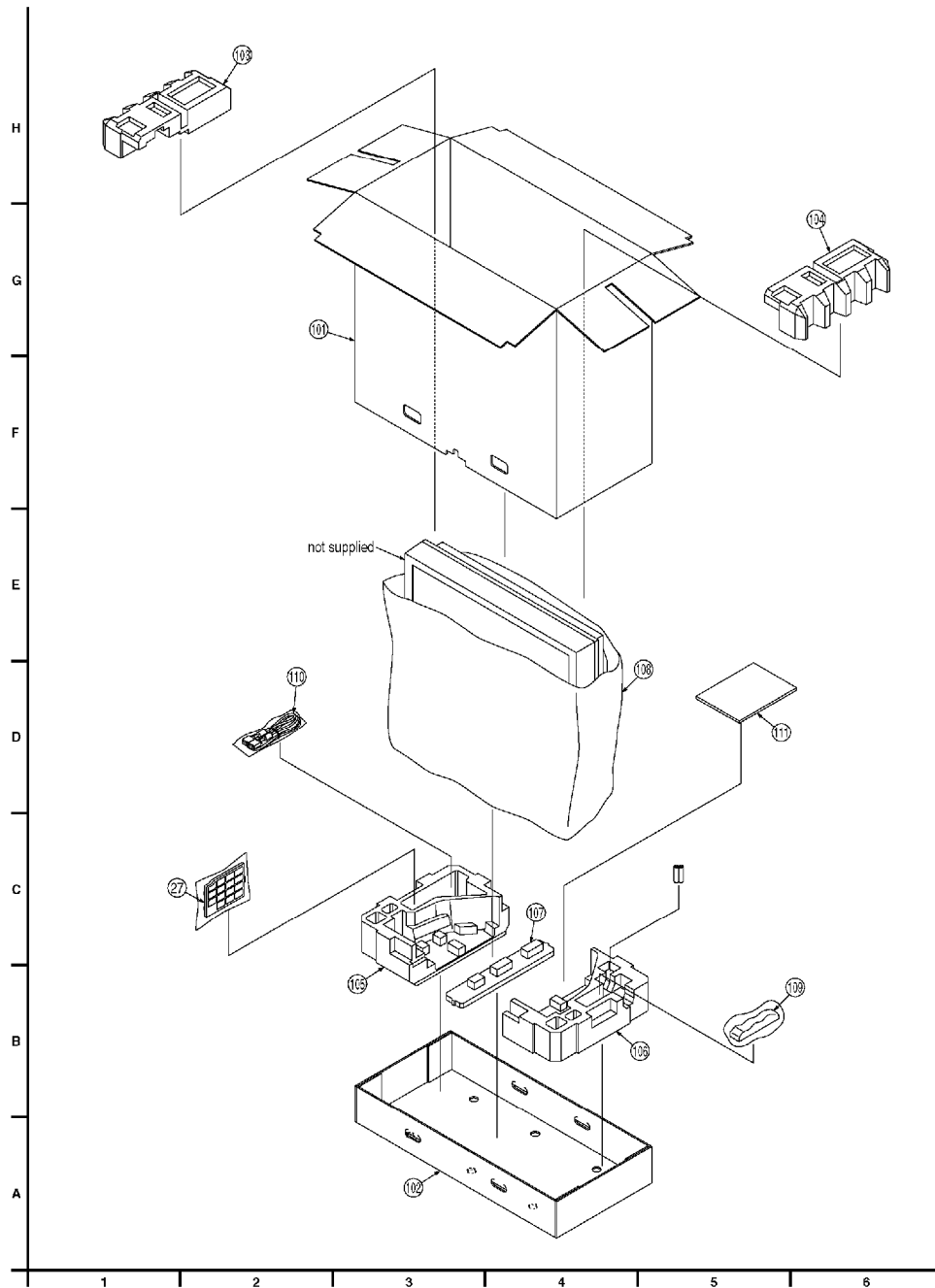
4 TV FRAME SECTION

IMPORTANT SAFETY NOTICE
COMPONENTS IDENTIFIED BY THE SIGN  HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.



11.5. PACKING PARTS AND ACCESSORIES SECTION

5 PACKING PARTS AND ACCESSORIES SECTION



12. REPLACEMENT PARTS LISTS

BEFORE REPLACING PARTS, READ THE FOLLOWING:

12.1. REPLACEMENT NOTES

12.1.1. General Notes

1. Use only original replacement parts:

To maintain original function and reliability of repaired units, use

only original replacement parts which are listed with their part numbers in the parts list.

2. IMPORTANT SAFETY NOTICE

Components identified by the sign  have special characteristics important for safety. When replacing any of these components, use only the specified parts.

3. SPECIAL NOTE

All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "ELECTROSTATICALLY SENSITIVE (ES) DEVICES" section of this service manual.

4. Parts with no Ref. No. in "EXPLODED VIEWS" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
5. Parts different in shape or size may be used. However, only interchangeable parts will be supplied as service replacement parts.
6. Parts with mark "MKE" in the Remarks column are supplied from MKE. Others are supplied from MKA.
7. Item numbers with capital letter E (Example: E10, E20,...) in the Ref. No. column are shown in the exploded views.
8. Parts whose Ref. Nos. are the same are interchangeable as replacement parts. Any of these parts may be ordered and used as a replacement part.

12.1.2. Mechanical Replacement Notes

1. Section No. of parts shown in Exploded Views are indicated in the Remarks column.
2. After replacing the Projection Unit (Ref. No. 11), be sure to perform "Picture Position Adjustment," "Focus Adjustment," "Set LAMP RUN TIME of original value," and "Reset Filter Time." Refer to "WHEN REPLACING THE PROJECTION UNIT ON THE UNIT AT THE USER'S LOCATION" in SERVICE NOTES.
3. When replacing the Projection Unit (Ref. No. 11), be sure to place

- the Light Prevention Plate B (Ref. No. 16) on it.
4. The Infrared Remote Control Unit (Ref. No. 123) replacement part is available as a complete assembly unit only. Do not try to disassemble the Infrared Remote Control Unit.
 5. When replacing the Front Thermistor C.B.A. (Ref. No. E80) or the Base Front Unit (Ref. No. 21), be sure to place the Joint Filter (Ref. No. 24).
 6. After replacing the Filter Unit (Ref. No. 27), be sure to perform "Reset Filter Time." Refer to "WHEN REPLACING THE PROJECTION UNIT ON THE UNIT AT THE USER'S LOCATION" in SERVICE NOTES.
 7. The individual parts in the Lamp Fan Unit (Ref. No. 271) are not supplied separately. When replacing the fan, install after removing the duct from the unit.

12.1.3. Electrical Replacement Notes

1. Unless otherwise specified;

All resistors are in Ω , K = 1,000 Ω , M = 1,000 k Ω .

2. Abbreviation

RTL:

Retention Time Limited

This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.

NR:

Non Repairable Board Ass'y

MGF CHIP:

Metal Glaze Film Chip

C CHIP:

Ceramic Chip

COMPLX CMP:

Complex Component

W FLMPRF:

Wirewound Flameproof

C.B.A.:

Circuit Board Assembly

P.C.B.:

Printed Circuit Board

E.S.D.:

Electrostatically Sensitive Devices

3. When replacing 0 Ω resistor, a wire can be substituted for it.
4. LCD Power C.B.A. (Ref. No. E20) replacement note:
LCD Power C.B.A. is supplied as a unit only. Please note that individual parts on it are not supplied. However, the parts with Ref. No. in "EXPLODED VIEWS" are available separately as replacement parts.
5. Connector Cable (Ref. No. P1701) replacement note:
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE NUMBER LSJA0411 (115 °C).

COMPARISON CHART OF MODELS & MARKS


MODEL	MARK
PT-40LC12	A
PT-45LC12	B

12.2. MECHANICAL REPLACEMENT PARTS LIST





COMPARISON CHART OF MODELS & MARKS

MODEL	MARK
PT-40LC12	A
PT-45LC12	B

MECHANICAL REPLACEMENT PARTS

Ref. No.	Part No.	Part Name & Description	Remarks
<u>1</u>	LSYK0905	BACK COVER UNIT	1
<u>2</u>	LSKF0435	AV FRONT DOOR	1
<u>3</u>	TEKC011	SHAFT DUMPER	1
<u>4</u>	LSYY0018	FRONT COVER L UNIT	1
<u>5</u>	LSYY0019	FRONT COVER R UNIT	1
<u>11</u>	LSXA0459-HB	PROJECTION UNIT (A)	2
11	LSXA0465-HB	PROJECTION UNIT (B)	2
<u>12</u>	LSGF0052	LIGHT PREVENTION PLATE A,POLYCARBONATE	1
<u>13</u>	LSMA0604	FRONT BAR	2
<u>15</u>	LSYK0909	SCREEN UNIT (A)	1
15	LSYK0932	SCREEN UNIT (B)	1
<u>16</u>	LSGF0053	LIGHT PREVENTION PLATE B,POLYCARBONATE	2
<u>17</u>	LSSC0569	LAMP GROUNDING PLATE,STEEL	2
<u>18</u>	STL450-3-1BK	CLAMPER	1,3
<u>21</u>	LSYK0959	BASE FRONT PANEL UNIT	2
<u>22</u>	LSYF0533	LAMP COVER UNIT	2
<u>23</u>	LSMA0601	GROUNDING PLATE,STEEL	2
<u>24</u>	LSMF0079	JOINT FILTER	2
<u>25</u>	LSSC0566	FRONT JACK GROUNDING PLATE A,STEEL	2
<u>26</u>	LSSC0567	FRONT JACK GROUNDING PLATE B,STEEL	2
<u>27</u>	LSYF0530	FILTER UNIT	2,5
<u>28</u>	L0AA12A00006	SPEAKER	2
<u>29</u>	LSMF0083	SPACER	2,3
<u>31</u>	LSQL1337	CAUTION LABEL A	2
<u>32</u>	LSQL1338	FILTER LABEL	2
<u>33</u>	LSYK0907	CENTER PANEL UNIT (A)	1
33	LSYK0930	CENTER PANEL UNIT (B)	1
<u>34</u>	TMM14414	STRIKE	1
<u>35</u>	TMM14415	SUPPORT PLATE,PLASTIC	1
<u>36</u>	LSGQ0059	FAN DUCT	2
<u>37</u>	LSMA0605	FAN PLATE,STEEL	2
<u>38</u>	FBL12G12L2CS	DUCT FAN	2 
<u>39</u>	LSGF0051	LIGHT PREVENTION PLATE C,POLYCARBONATE	2
<u>41</u>	LSMA0603	TOP PLATE LEFT,STEEL	3
<u>42</u>	LSMA0615	TOP PLATE RIGHT,STEEL	3
<u>44</u>	LSMA0606	OPTICAL BASE PLATE,STEEL	3
<u>45</u>	LSMA0602	TOP PLATE REAR,STEEL	3
<u>46</u>	LSGQ0063	PIPE HOLDER	3
<u>47</u>	LSGQ0060	FRONT BOSS A	3
<u>48</u>	LSSC0558	POWER GROUNDING PLATE,STEEL	2
<u>49</u>	LSMA0591	JOINT PLATE,STEEL	3
<u>50</u>	LSSC0568	GROUNDING PLATE,STEEL	2
<u>51</u>	LSSC0570	POWER GROUNDING PLATE REAR,STEEL	2
<u>52</u>	LSGK0096	PIPE	3
<u>53</u>	TMM6463-1	CLAMPER	2
<u>61</u>	LSGV0039	BACK PANEL (A)	1
61	LSGV0040	BACK PANEL (B)	1
<u>62</u>	LSDL0213	MIRROR (A)	1
62	LSDL0214	MIRROR (B)	1
<u>63</u>	LSMA0588	MIRROR PLATE TOP,STEEL	1
<u>64</u>	LSMA0599	SCREEN BASE PLATE FRONT,STEEL	1
<u>65</u>	LSMA0614	SCREEN BASE PLATE REAR,STEEL	1
<u>66</u>	LSMA0592	MOUNT PLATE,STEEL	1
<u>67</u>	LSMF0218	SPACER C	1

<u>1.</u>	2011-2012	2012-2013	.
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Ref. No.	Part No.	Part Name & Description	Remarks
68	LSMF0219	SPACER D	1
71	LSMA0586	BASE PLATE R,STEEL	3
72	LSMA0609	BASE PLATE L,STEEL	3
73	LSMA0613	OPTICAL BASE PLATE,STEEL	3
74	LSGQ0056	FRONT SPEAKER HOLDER L	3
75	LSGQ0055	FRONT SPEAKER HOLDER R	3
76	LSGQ0057	REAR SPEAKER HOLDER	3
77	LSEQ0645	SPEAKER BOX UNIT	3
79	LSJA0349-FE	AC CORD W/PLUG,120V	4 
80	LSJH0064	REAR JACK PANEL	4
81	LSMP0381	TV FRAME	4
82	LSMA0452	SUPPORT PLATE,STEEL	4
83	LSSC0565	REAR JACK GROUNDING PLATE,STEEL	4
84	LSKU0017	BASE FRAME	3
85	LSMG0113	SPACER	3
86	LSMZ0331	SPACER	2
87	LSMG0114	SPACER	3
101	LSPG1373	PACKING CASE,PAPER (A)	5
101	LSPG1374	PACKING CASE,PAPER (B)	5
102	LSPG1375	PACKING CASE BOTTOM,PAPER	5
103	LSPN0267	TOP CUSHION LEFT,STYROFOAM (A)	5
103	LSPN0271	TOP CUSHION LEFT,STYROFOAM (B)	5
104	LSPN0268	TOP CUSHION RIGHT,STYROFOAM (A)	5
104	LSPN0272	TOP CUSHION RIGHT,STYROFOAM (B)	5
105	LSPN0265	BOTTOM CUSHION LEFT,STYROFOAM	5
106	LSPN0266	BOTTOM CUSHION RIGHT,STYROFOAM	5
107	LSPN0293	CENTER CUSHION,STYROFOAM	5
108	LPE64005A	BAG,POLYETHYLENE	5
109	EUR7603Z80	INGRARED REMOTE CONTROL UNIT	5
110	LSJA0239	RGB CABLE W/PLUG	5
111	LSQT0583A	INSTRUCTION BOOK	5
202	L6FCNGEH0001	FRONT FAN	2  MKE
204	LSMF0078	SEAL FILTER	2 MKE
209	LSJA0439	GROUNIDNG WIRE	2 MKE
220	LSJA0432	CONNECTOR CABLE W/PLUG,5V	2 MKE
271	LSXA0446	LAMP FAN UNIT	2  MKE
272	LSRF0008	FAN	2 
281	VMFS0134	SHEET,NYLON-RAYON	2,4
286	LSJA0414	GROUNDING WIRE	4
293	J0KG00000034	FERRITE CORE	2,4
401	XTV4+16A	TAPPING SCREW,STEEL	1,2,3
402	XTV3+8J	TAPPING SCREW,STEEL	1,2,3,4
403	XTW3+8PR	SCREW,STEEL	2
404	XTV4+14J	SCREW,STEEL	1,2,3
405	XTV4+20A	TAPPING SCREW,STEEL	2
406	XTV3+10J	TAPPING SCREW,SCREW	1
407	XTS3+8JFZ	TAPPING SCREW,STEEL	1
408	XTN4+12AR	SCREW,STEEL	4
409	XTV3+10JR	SCREW,STEEL	4
410	XYN3+F10S	SCREW W/WASHER,STEEL	2
413	XSB4+35	SCREW,STEEL	2 MKE
418	XTN3+4F	SCREW,STEEL	2 MKE
432	XTV3+25G	SCREW,STEEL	2 MKE

Ref. No.	Part No.	Part Name & Description	Remarks
435	XTV3+20J	TAPPING SCREW,STEEL	2
439	XWG46F115	WASHER,STEEL	2
701	EYF52BC	FUSE HOLDER	2,4
702	LML69002A	CLAMPER	4
705	LSJA0438	GROUNDING WIRE	4
706	TMM7464-1	CLAMPER	4
710	LSJA0428	CONNECTOR CABLE W/PLUG,5V	4
712	VMFS0320	SPACER	4
713	VMTS0059	CUSHION,RUBBER	4
714	VMTS0035	CUSHION,RUBBER	4
718	LSJA0429	CONNECTOR CABLE W/PLUG,5V	4
721	LSMF0057	SHEET,NYLON-RAYON	4
723	LSLQ0307	FERRITE CORE	4
725	LSJA0431	CONNECTOR CABLE W/PLUG,5V	4
726	LSJA0430	CONNECTOR CABLE W/PLUG,5V	4
727	LSJA0433	CONNECTOR CABLE W/PLUG,3.3V	2
728	LSSC0559	HEAT SINK	2
729	TMM5439-1	CLAMPER	2
731	PNA4611M00HD	INFRARED RECEIVER UNIT	1
E10	LSEP3067A	TV MAIN C.B.A.	4
E20	LSEB3062A1	LCD POWER C.B.A. NR	2
E30	LSEP3065A	AUDIO POWER C.B.A.	2 RTL
E40	LSEP3068A	FRONT JACK C.B.A.	2 RTL
E50	LSEP3072A	RGB JACK C.B.A.	2 RTL
E60	LSEP3069A	REAR JACK C.B.A.	4
E70	LSEP3071A	OPERATION C.B.A.	1 RTL
E80	LSEP3081A	FRONT THERMISTOR C.B.A.	2 RTL
E90	LSEP3082A	LAMP COVER SWITCH C.B.A.	2 RTL
E110	LSEP3080A1	LAMP THERMISTOR C.B.A.	2 RTL MKE

SERVICE FIXTURES AND TOOLS

Ref. No.	Part No.	Part Name & Description	Remarks
	LSYF0532	FILTER TOOL	
	LSUA0035	EXTENSION CABLE	

12.3. ELECTRICAL REPLACEMENT PARTS LIST

PRINTED CIRCUIT BOARD ASSEMBLY

Ref. No.	Part No.	Part Name & Description	Remarks
E10	LSEP3067A	TV MAIN C.B.A.	E.S.D.
E20	LSEB3062A1	LCD POWER C.B.A. NR	
E30	LSEP3065A	AUDIO POWER C.B.A.	RTL
E40	LSEP3068A	FRONT JACK C.B.A.	RTL
E50	LSEP3072A	RGB JACK C.B.A.	RTL
E60	LSEP3069A	REAR JACK C.B.A.	E.S.D.
E70	LSEP3071A	OPERATION C.B.A.	RTL
E80	LSEP3081A	FRONT THERMISTOR C.B.A.	RTL
E90	LSEP3082A	LAMP COVER SWITCH C.B.A.	RTL
E110	LSEP3080A1	LAMP THERMISTOR C.B.A.	RTL MKE

12.3.1. TV MAIN C.B.A.

MISCELLANEOUS


Ref. No.	Part No.	Part Name & Description	Remarks
286	LSJA0414	GROUNDING WIRE	
293	J0KG00000034	FERRITE CORE	
702	LML69002A	CLAMPER	
705	LSJA0438	GROUNDING WIRE	
706	TMM7464-1	CLAMPER	
710	LSJA0428	CONNECTOR CABLE W/PLUG,5V	
712	VMFS0320	SPACER	
713	VMTS0059	CUSHION,RUBBER	
718	LSJA0429	CONNECTOR CABLE W/PLUG,5V	

12.3.2. LCD POWER C.B.A.


COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L1309	LSLQ0307	FERRITE CORE	
L1709	LSLQ0307	FERRITE CORE	
L1710	LSLQ0392	FERRITE CORE	
L1711	LSLQ0392	FERRITE CORE	
L1712	LSLQ0307	FERRITE CORE	
L1713	LSLQ0307	FERRITE CORE	

PIN HEADERS


Ref. No.	Part No.	Part Name & Description	Remarks
P1701	LSJA0411	CONNECTOR CABLE W/PLUG,120V	
P1702	LSJA0412	CONNECTOR CABLE W/PLUG,16V	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
272	LSRF0008	FAN	
435	XTV3+20J	TAPPING SCREW,STEEL	

12.3.3. AUDIO POWER C.B.A.

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D1101	B0EBNR000007	DIODE SI	




CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C1101	LSCE0134	ELECTROLYTIC 50V 4700UF	


PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P1101	VJPS0704	CONNECTOR 2P	
P1102	LSJA0417	CONNECTOR CABLE W/PLUG,33V	

FUSE & PROTECTOR

Ref. No.	Part No.	Part Name & Description	Remarks
F1101	VSFS0003A16	FUSE 125V 1.6A	
F1101	K5D162AB0003	FUSE 125V 1.6A	
F1101	K5D162AQ0004	FUSE 125V 1.6A	

TRANSFORMER

Ref. No.	Part No.	Part Name & Description	Remarks
T1103	ETP59VQU21PA	TRANSFORMER	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
410	XYN3+F10S	SCREW W/WASHER,STEEL	
701	EYF52BC	FUSE HOLDER	
728	LSSC0559	HEAT SINK	
729	TMM5439-1	CLAMPER	

12.3.4. FRONT JACK C.B.A.

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R3951	ERDS2TJ750	CARBON 1/4W 75	
R3952	ERDS2TJ750	CARBON 1/4W 75	
R3953	ERDS2TJ750	CARBON 1/4W 75	
R4590	ERDS2TJ122	CARBON 1/4W 1.2K	
R4591	ERDS2TJ102	CARBON 1/4W 1K	
R4592	ERDS2TJ122	CARBON 1/4W 1.2K	
R4593	ERDS2TJ102	CARBON 1/4W 1K	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P3902	LSJA0425	CONNECTOR CABLE W/PLUG,9V	
P4591	LSJA0426	CONNECTOR CABLE W/PLUG,27V	
P4801	LSJA0427	CONNECTOR CABLE W/PLUG,5V	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK4590	K2HC103A0017	EARPHONE JACK SOCKET	
JK4801	K1U412A00008	S-JACK SOCKET	
JK4802	K2HC103A0017	EARPHONE JACK SOCKET	

12.3.5. RGB JACK C.B.A.

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D3901	B0BD6R800007	DIODE ZENER 6.8V	
D3901	NNCD6.2G-T1	DIODE ZENER CHIP 6.2V	

FILTERS

Ref. No.	Part No.	Part Name & Description	Remarks
FL3901	J0MAB0000055	FILTER	
FL3902	J0MAB0000055	FILTER	
FL3903	J0MAB0000055	FILTER	

COILS

Ref. No.	Part No.	Part Name & Description	Remarks
L3902	ERJ3GEY0R00V	MGF CHIP 1/16W 0	
L3903	ERJ3GEY0R00V	MGF CHIP 1/16W 0	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P3901	K1KA11B00039	CONNECTOR 11P	

JACKS

Ref. No.	Part No.	Part Name & Description	Remarks
JK3901	K1FB115A0015	D-SUB MINI JACK SOCKET	

12.3.6. REAR JACK C.B.A.

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
281	VMFS0134	SHEET,NYLON-RAYON	
713	VMTS0059	CUSHION,RUBBER	
714	VMTS0035	CUSHION,RUBBER	
721	LSMF0057	SHEET,NYLON-RAYON	
723	LSLQ0307	FERRITE CORE	
725	LSJA0431	CONNECTOR CABLE W/PLUG,5V	
726	LSJA0430	CONNECTOR CABLE W/PLUG,5V	

12.3.7. OPERATION C.B.A.

TRANSISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
Q6301	2SA1309AIRTA	TRANSISTOR SI PNP	
Q6301	2SA1309AISTA	TRANSISTOR SI PNP	
Q6301	2SA1309ARA	TRANSISTOR SI PNP	
Q6301	2SA1309ASA	TRANSISTOR SI PNP	
Q6302	2SA1309AIRTA	TRANSISTOR SI PNP	
Q6302	2SA1309AISTA	TRANSISTOR SI PNP	
Q6302	2SA1309ARA	TRANSISTOR SI PNP	
Q6302	2SA1309ASA	TRANSISTOR SI PNP	

DIODES

Ref. No.	Part No.	Part Name & Description	Remarks
D6301	B3AGA0000072	LIGHT EMITTING DIODE RED/GREEN	
D6303	B3AAA0000538	LIGHT EMITTING DIODE RED	
D6304	B3AAA0000538	LIGHT EMITTING DIODE RED	

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R6315	ERDS2TJ470T	CARBON 1/4W 47	
R6316	ERDS2TJ391	CARBON 1/4W 390	
R6317	ERDS2TJ221	CARBON 1/4W 220	
R6318	ERDS2TJ471	CARBON 1/4W 470	
R6319	ERDS2TJ471	CARBON 1/4W 470	
R6326	ERDS2TJ182	CARBON 1/4W 1.8K	
R6327	ERDS2TJ392	CARBON 1/4W 3.9K	
R6328	ERDS2TJ182	CARBON 1/4W 1.8K	
R6329	ERDS2TJ103	CARBON 1/4W 10K	
R6330	ERDS2TJ103	CARBON 1/4W 10K	
R6331	ERDS2TJ103	CARBON 1/4W 10K	
R6332	ERDS2TJ103	CARBON 1/4W 10K	

CAPACITORS

Ref. No.	Part No.	Part Name & Description	Remarks
C6302	ECEA0JKA470	ELECTROLYTIC 6.3V 47UF	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P6303	K1KA09B00064	CONNECTOR 9P	

SWITCHES


Ref. No.	Part No.	Part Name & Description	Remarks
SW6301	EVQ11G05R	PUSH SWITCH	
SW6302	EVQ11G05R	PUSH SWITCH	
SW6304	EVQ11G05R	PUSH SWITCH	
SW6305	EVQ11G05R	PUSH SWITCH	
SW6311	EVQ11G05R	PUSH SWITCH	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
731	PNA4611M00HD	INFRARED RECEIVER UNIT	

12.3.8. FRONT THERMISTOR C.B.A.

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R2911	D4CA35030002	THERMISTER	

PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P2911	K1KA04B00132	CONNECTOR 4P	
P2912	K1KA02B00130	CONNECTOR 2P	

MISCELLANEOUS

Ref. No.	Part No.	Part Name & Description	Remarks
727	LSJA0433	CONNECTOR CABLE W/PLUG,3.3V	

12.3.9. LAMP COVER SWITCH C.B.A.

PIN HEADERS


Ref. No.	Part No.	Part Name & Description	Remarks
P2921	K1KA02B00130	CONNECTOR 2P	

SWITCHES

Ref. No.	Part No.	Part Name & Description	Remarks
SW2921	K0L1BA000070	PUSH SWITCH	

12.3.10. LAMP THERMISTOR C.B.A.

RESISTORS

Ref. No.	Part No.	Part Name & Description	Remarks
R2901	D4CE31330001	THERMISTOR	 MKE

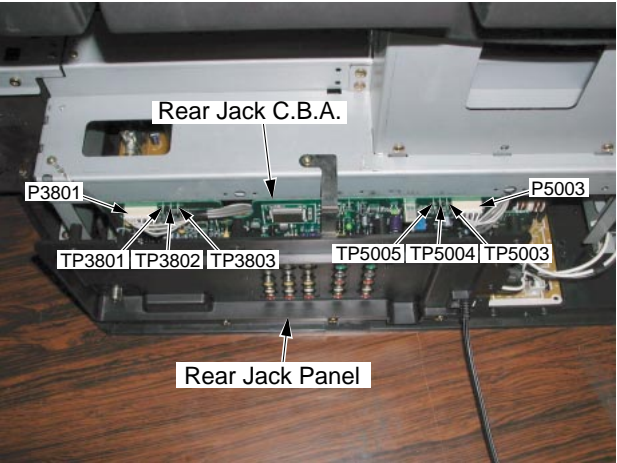
PIN HEADERS

Ref. No.	Part No.	Part Name & Description	Remarks
P2901	LSJA0421	CONNECTOR CABLE W/PLUG,3.3V	MKE

13. SCHEMATIC DIAGRAMS FOR PRINTING WITH LETTER SIZE

WAVEFORMS

Location of Connectors and TP's on REAR JACK C.B.A.



Waveforms of Connector P5003 on REAR JACK C.B.A.

Pin No.	Signal Name	Waveforms
1	MAIN Y	
2	GND	
3	MAIN PB	
4	GND	
5	MAIN PR	
6	GND	
7	MAIN H-SYNC	
8	GND	
9	MAIN V-SYNC	

Waveforms of Connector P3801 on REAR JACK C.B.A.

Pin No.	Signal Name	Waveforms
1	SUB R	
2	GND	
3	SUB G	
4	GND	
5	SUB B	
6	GND	
7	SUB H-SYNC	
8	GND	
9	SUB V-SYNC	

Waveforms of TP's on REAR JACK C.B.A.

TP No.	Signal Name	Waveforms
TP5003	MAIN Y	
TP5004	MAIN PB	
TP5005	MAIN PR	
TP3803	SUB R	
TP3802	SUB G	
TP3801	SUB B	

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

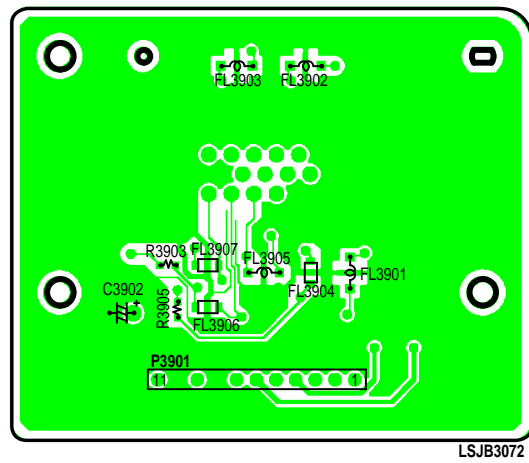
NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

FRONT JACK C.B.A. LSEP3068A
RGB JACK C.B.A. LSEP3072A
OPERATION C.B.A. LSEP3071A
PT-40LC12/PT-45LC12

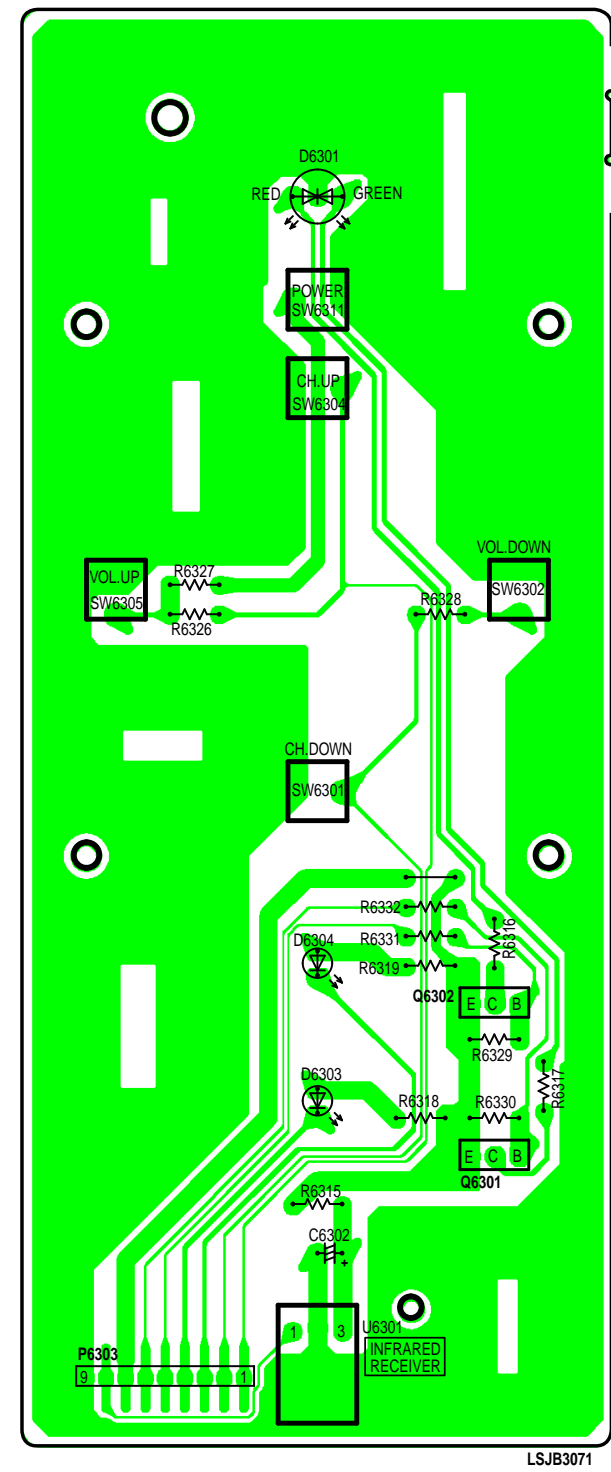
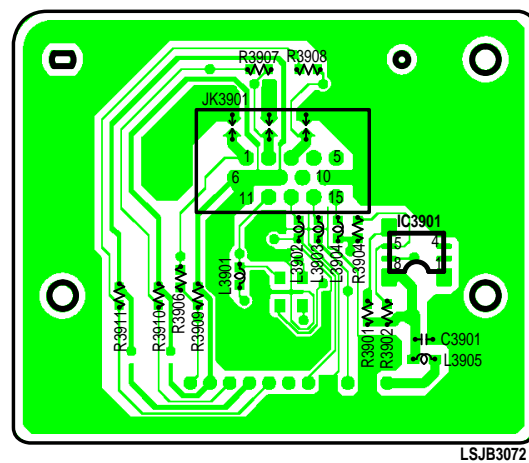


NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

(COMPONENT SIDE)



(FOIL SIDE)

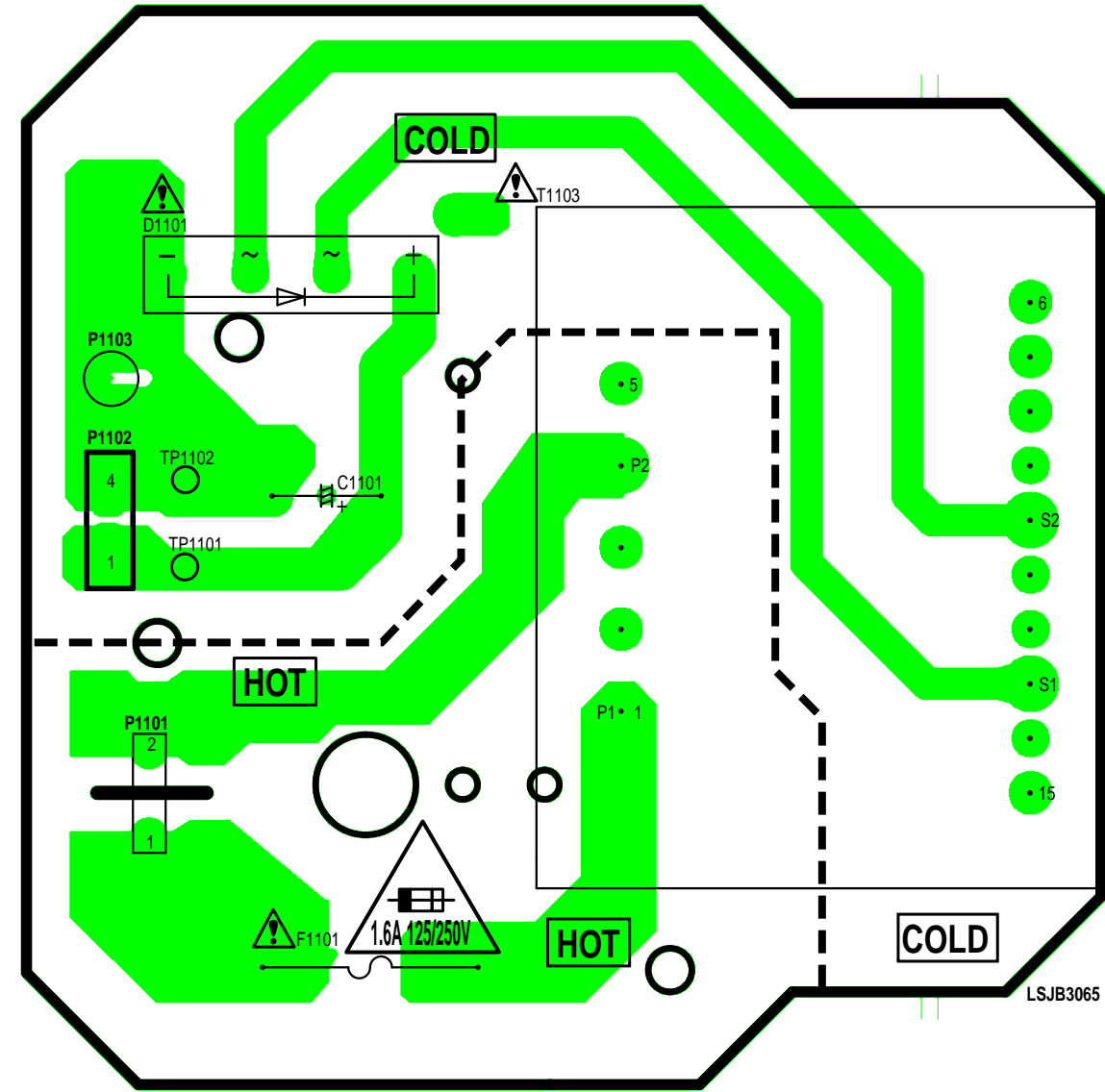


AUDIO POWER C.B.A. LSEP3065A

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÊME
TYPE 1.6A 125/250V

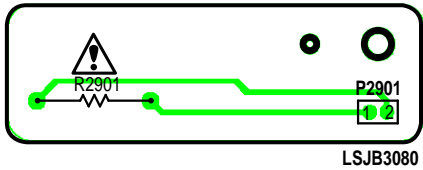
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.



HOT CIRCUIT. BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING.

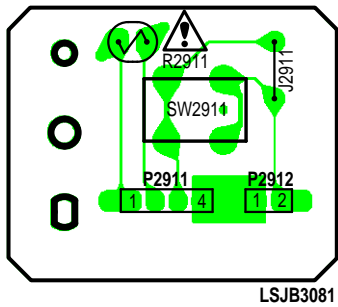
LAMP THERMISTOR C.B.A. LSEP3080A1

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.



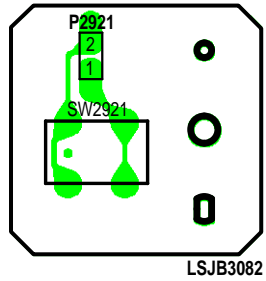
FRONT THERMISTOR C.B.A. LSEP3081A

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.



LAMP COVER SWITCH C.B.A. LSEP3082A

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST FOR PROPER PARTS CONTENT.



CABINET SECTION

DISASSEMBLY METHOD

When reassembling, perform the step (s) in the reverse order.
Bend, route and dress the wires as they were originally.

Note :

- a. Place a cloth or some other soft material under the P.C. Boards or Unit to prevent damage.
- b. When reinstalling, ensure that the connectors are connected and electrical components have not been damaged.
- c. Do not supply power to the unit during disassembly and reassembly.

Cabinet section contains following removal procedures:

REMOVAL OF THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.
REMOVAL OF THE PROJECTION UNIT
REMOVAL OF THE AUDIO POWER C.B.A., THE DUCT FAN, THE LCD POWER C.B.A., THE POWER FAN AND THE TEMPERATURE FUSE
REMOVAL OF THE FRONT FAN FROM THE UNIT
REMOVAL OF THE LAMP FAN FROM THE UNIT
REMOVAL OF THE SCREEN UNIT, THE MIRROR AND THE BACK PANEL
REMOVAL OF THE FRONT JACK C.B.A., THE RGB JACK C.B.A., THE FRONT THERMISTOR C.B.A., THE LAMP COVER SWITCH C.B.A., AND THE SPEAKER

Following screws are removed in the procedures above:

Screw for disassembly/assembly			} These screws are used for many parts.
Screw "a"	④02	small, gold	
Screw "b"	④01	large, gold	
Screw "c"	④08	large	
Screw "d"	④09	small	
Screw "e"	④03	small, red	
Screw "f"	④04	large, black	
Screw "g"	④05	large	
Screw "h"	④13	long	
Screw "i"	④32	long	
Screw "j"	④35	long	

REMOVAL OF THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.

- 1. Remove the Rear Cover by removing 20 Screws.

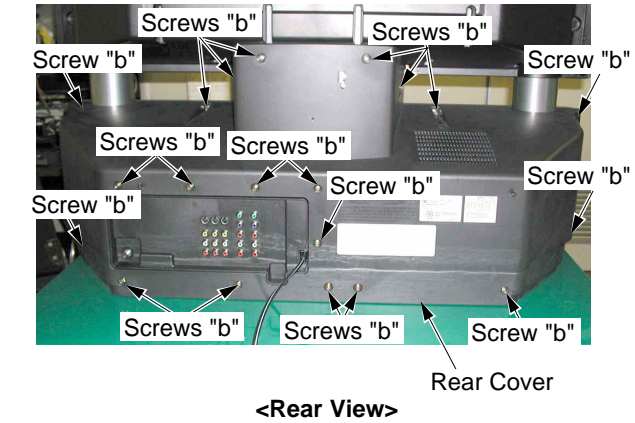


Fig. D1-1

- 2. 1) Remove the AV Front Door by releasing the Tabs after opening.
2) Remove the Front Cover L Unit and the Front Cover R Unit from the latches.

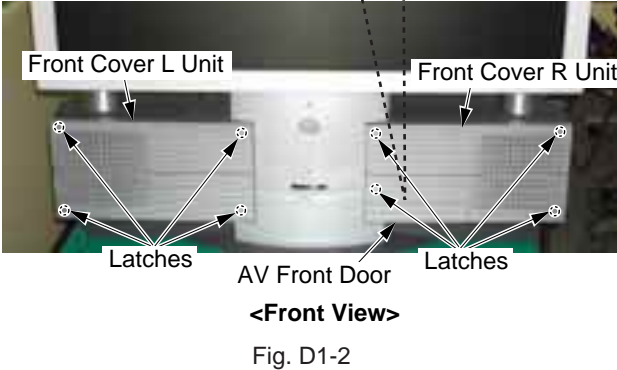
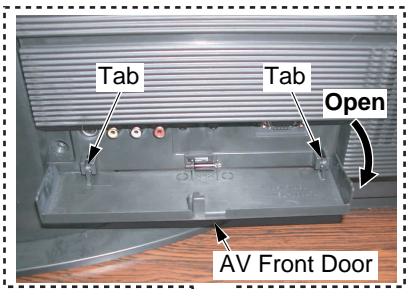


Fig. D1-2

- 3. Open the Center Panel Unit by removing the 4 Screws.

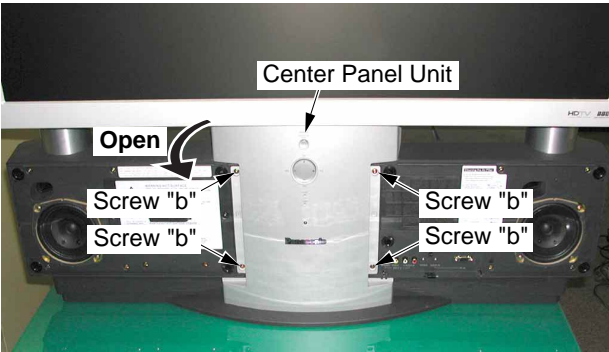


Fig. D1-3

- 4. 1) Disconnect the Connector P6303 on the Operation C.B.A.
2) Remove the Center Panel Unit.

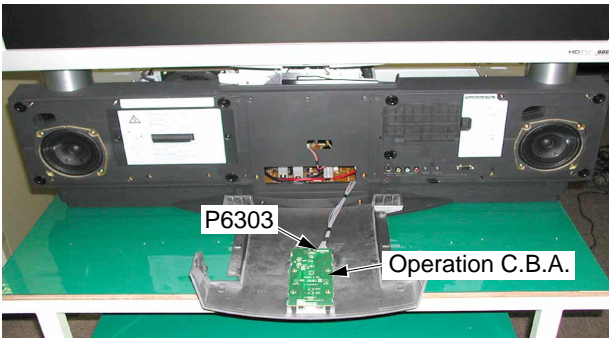


Fig. D1-4

- 5. Remove the Lamp Cover by loosening the 2 Screws.

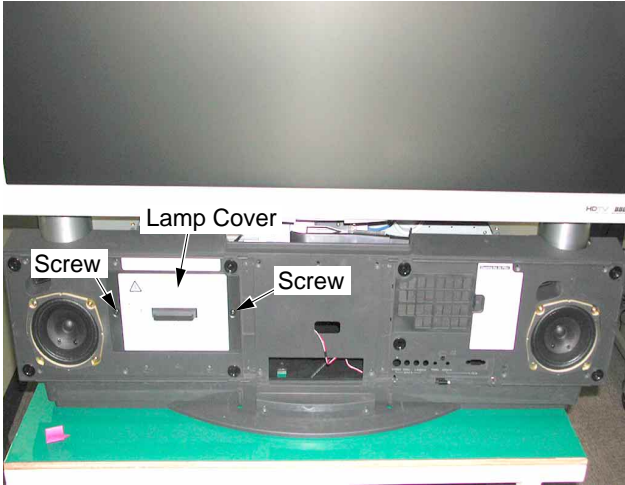


Fig. D1-5

6. Open the Base Front Panel Unit by removing the 16 Screws.

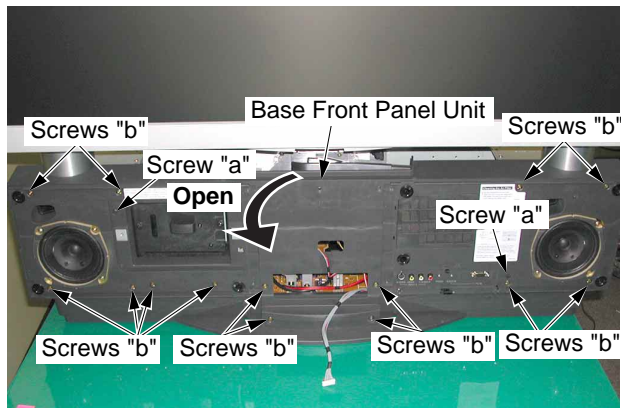


Fig. D1-6

7. 1) Disconnect Connector P2911 on the Front Thermistor C.B.A.
2) Remove the Screw of the GND Wire.

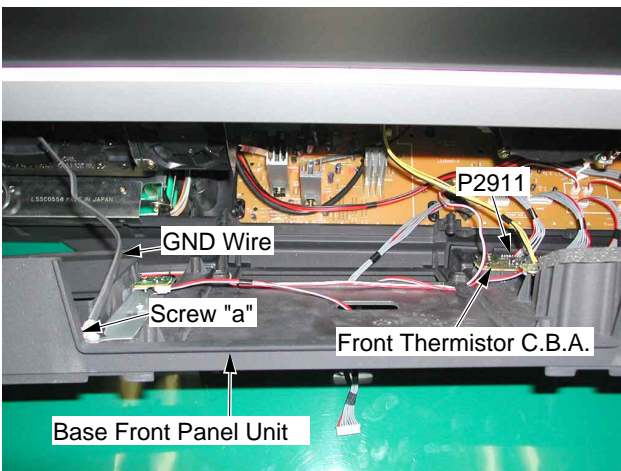
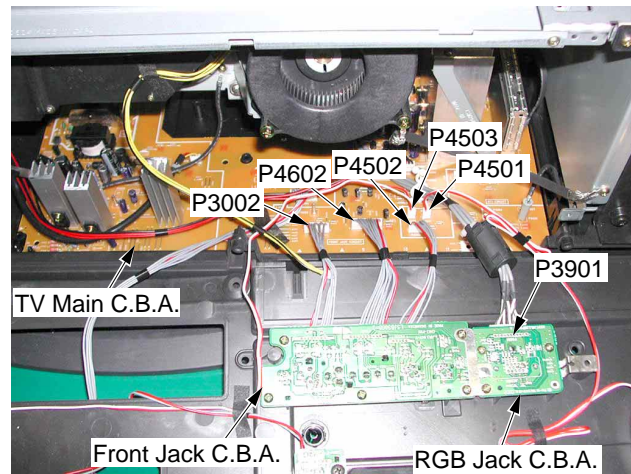
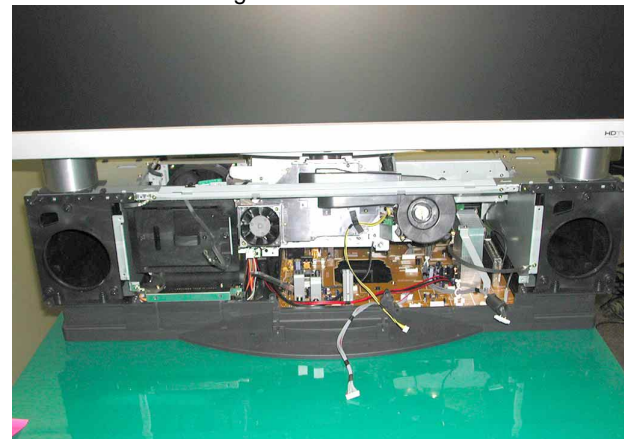


Fig. D1-7

8. Disconnect Connectors P3002, P4602, P4502, P4503 and P4501 on the TV Main C.B.A. and Connector P3901 on the RGB Jack C.B.A. Then, remove the Base Front Panel Unit.



After removing the Base Front Panel Unit



<Front View>

Fig. D1-8

9. 1) Disconnect Connectors P1005 (or P1007), P3006, P1010 and P4504 on the TV Main C.B.A.
2) Remove the GND Plate by removing the 2 Screws.
3) Remove the Screw of the GND Wire.

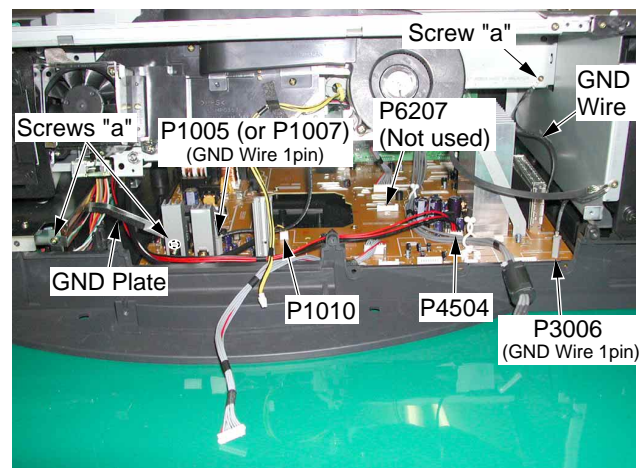


Fig. D1-9

10. Disconnect Connectors P2501, P2701, P2305 on the LCD Main C.B.A. and release them from the clampers.

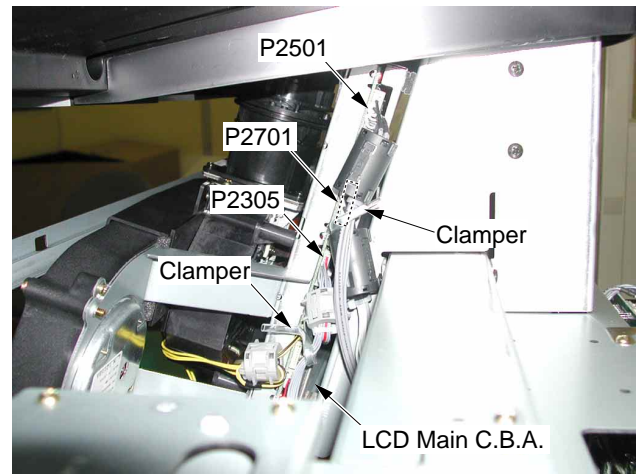


Fig. D1-10

11. 1) Disconnect Connector P804 on the TV Main C.B.A. by pressing the Locking Tab of the P804 connector cable and release it from the clamber.
2) Disconnect Connector P1101 on the Audio Power C.B.A. and release it from the clamber.
3) Remove the Screw on the GND Plate.
4) Remove 3 Screws on the TV Frame.

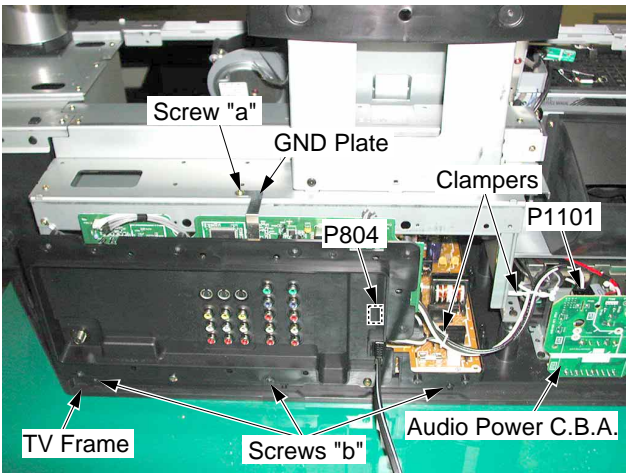


Fig. D1-11

12. Lift up and slide the TV Frame straight out by releasing the 2 Tabs from holes, and disconnect Connector P7001 while sliding the TV Frame at this time.

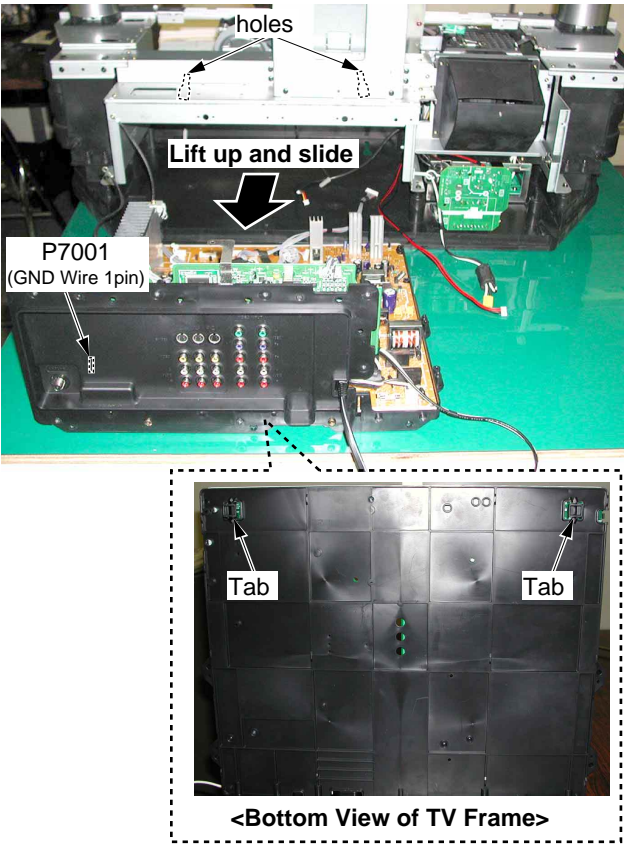


Fig. D1-12

13. 1) Remove the Rear Jack Panel from the Rear Jack C.B.A. by removing the 7 Screws.
2) Release the AC Cord by from the slot of the Rear Jack Panel.

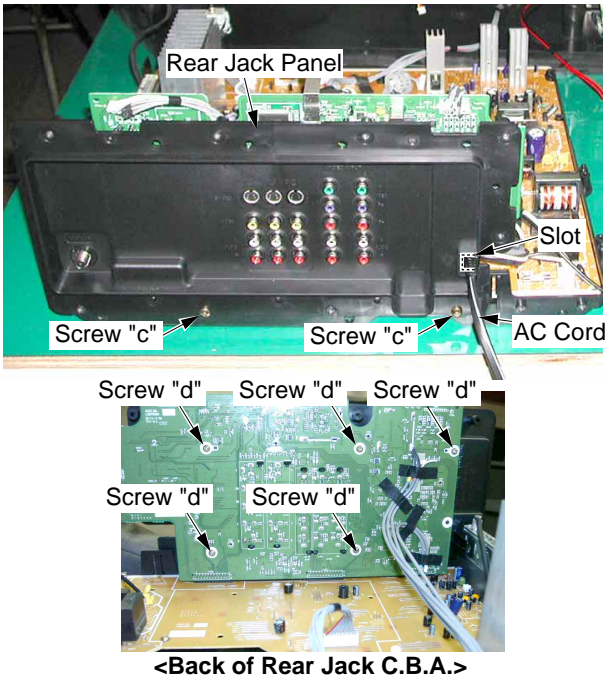


Fig. D1-13

14. Remove the Rear Jack C.B.A. by disconnecting Connectors P4601, P4603 and P4604 on the TV Main C.B.A. and release it from the clamper.

Note:

- 1. When replacing the Rear Jack C.B.A., remove the GND Plate from the Rear Jack C.B.A.
- 2. Take extreme caution when handling the Rear Jack Panel to avoid damage to Connectors P4601, P4603, P4604 on the TV Main C.B.A.

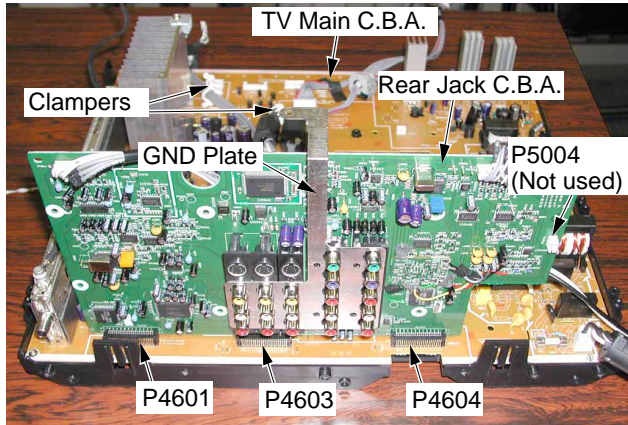
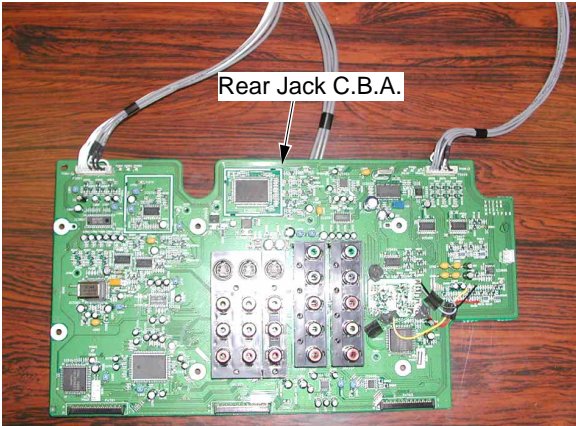


Fig. D1-14



- 15. 1) Remove the Support Plate by removing the 2 Screws.
- 2) Remove the 3 Screws on the TV Main C.B.A.
- 3) Remove the TV Main C.B.A. from the TV Frame by releasing the 3 Tabs.
- 4) Remove the AC Cord from Connector P801.

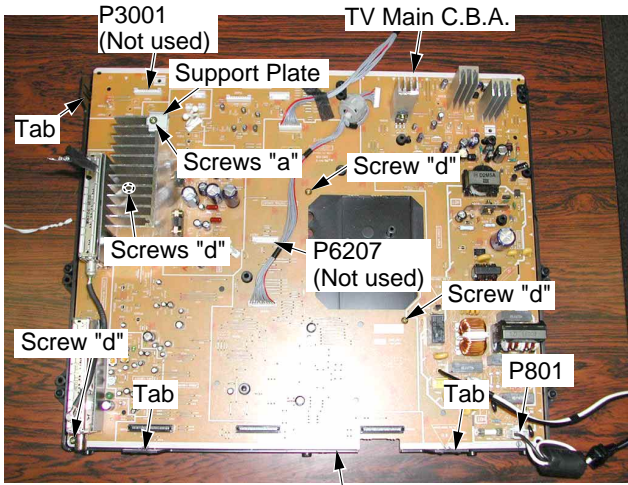


Fig. D1-15

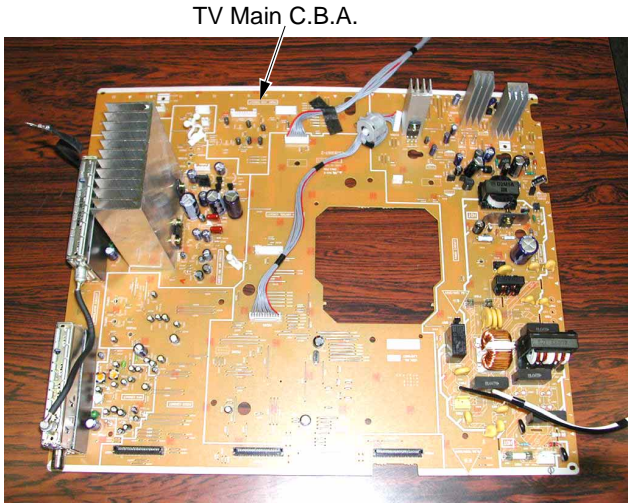


Fig. D1-16

Note:

- 1. When servicing, be careful not to damage the connectors on the C.B.A.s.
- 2. Connector P3001 is deleted on running change basis.

REMOVAL OF THE PROJECTION UNIT

Projection Unit includes the Optical Block, the LCD Main C.B.A., though does not include the Lamp.

CAUTION:

- 1. Be sure to make a note of the LAMP RUN TIME (value A) in Service Mode (LCD Main C.B.A. (1)):

LAMP TIME is stored in EEPROM on the LCD Main C.B.A. Therefore, before removing the Projection Unit at the user's location, make a note of the LAMP RUN TIME (value A) in Service Mode.
Then, after installing the new Projection Unit **(without the Lamp)** at the user's location, be sure to install the original Lamp and set the LAMP RUN TIME to the original value (value A) in Service Mode.
Otherwise, OSD and LED indication to request for Lamp replacement will be displayed at the wrong time.

Note:

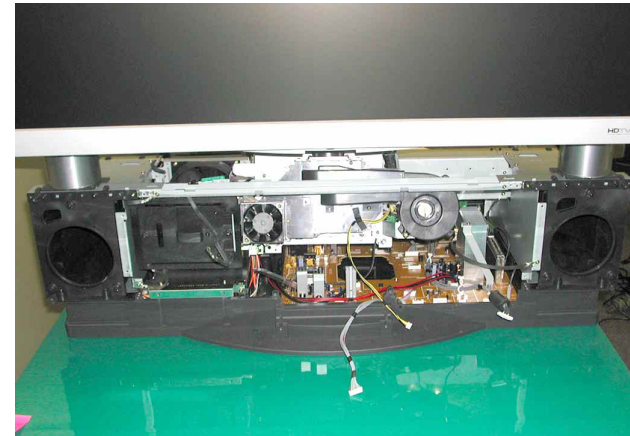
In case it is impossible to make a note of the LAMP RUN TIME because of a defective LCD Main C.B.A., ask the customer their daily average use and the approximate age of the current Lamp. Then, calculate the LAMP RUN TIME and make a note. Refer to "BEFORE REMOVING THE PROJECTION UNIT FROM THE UNIT AT THE USER'S LOCATION" in SERVICE NOTES.

- 2. Be sure to make a note of the FILTER TIME (value B) in Service Mode (LCD Main C.B.A. (1)):

FILTER TIME is stored in EEPROM on the LCD Main C.B.A. Therefore, before removing the Projection Unit at the user's location, make a note of the FILTER TIME (value B) in Service Mode.
Then, after installing the new Projection Unit at the user's location, be sure to set the FILTER TIME to the original value (value B) in Service Mode.
Otherwise, OSD and LED indication to request for Air Filter cleaning will be displayed at the wrong time.

- 1. Make a note of the LAMP RUN TIME (value A) and the FILTER TIME (value B) in Service Mode.
- 2. Remove the Rear Cover, the AV Front Door, the Front Cover L Unit, the Front Cover R Unit, the Center Panel Unit, the Lamp Cover and the Base Front Panel Unit. Refer to Steps 1~7 in "HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A."

After removing the Base Front Panel Unit



<Front View>

Fig. D2-1

- 3. 1) Remove the Front Bar by removing 2 Screws.
2) Disconnect Connector P1005 (or P1007), P1010 on the TV Main C.B.A. Remove the 2 Screws on the 3 GND Wires.

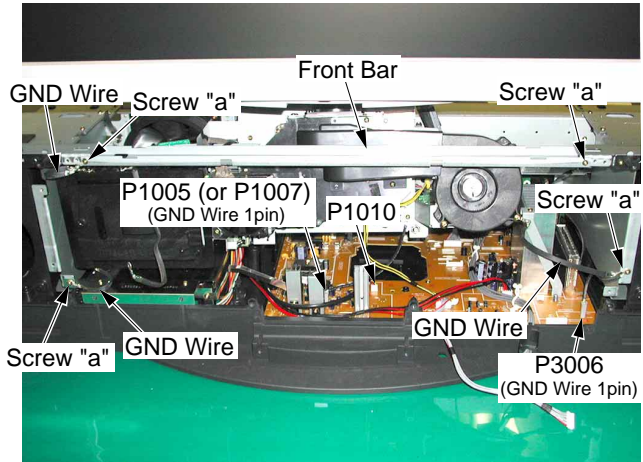


Fig. D2-2

- 4. Disconnect Connectors P2501, P2701, P2305 on the LCD Main C.B.A. and release them from the clampers.

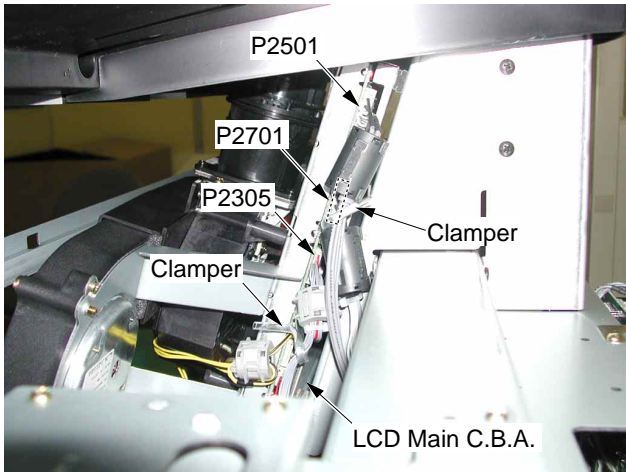


Fig. D2-3

- 5. Remove the Duct Fan Unit by removing the 4 Screws and releasing the 2 Hooking Portions.

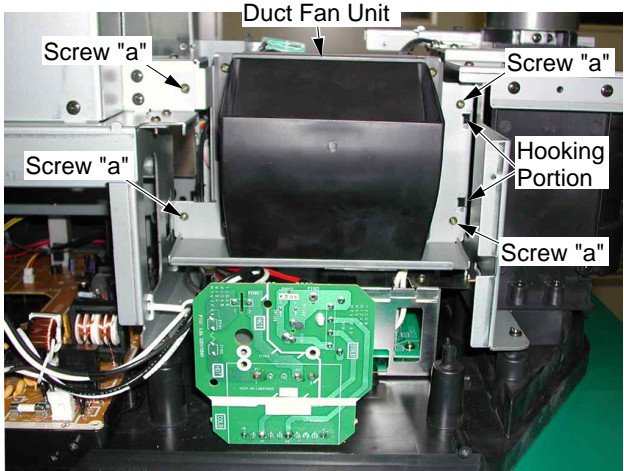


Fig. D2-4

6. 1) Disconnect the cable from the Lamp Socket by removing 2 Screws.
- 2) Remove the Temperature Fuse on the Lamp House by removing the 2 Screws.
- 3) Remove Connector P1905 on the LCD Main C.B.A.
- 4) Remove the Screw of the GND Plate and GND Wire.
- 5) Remove the 2 Screws of the 2 GND Wires.

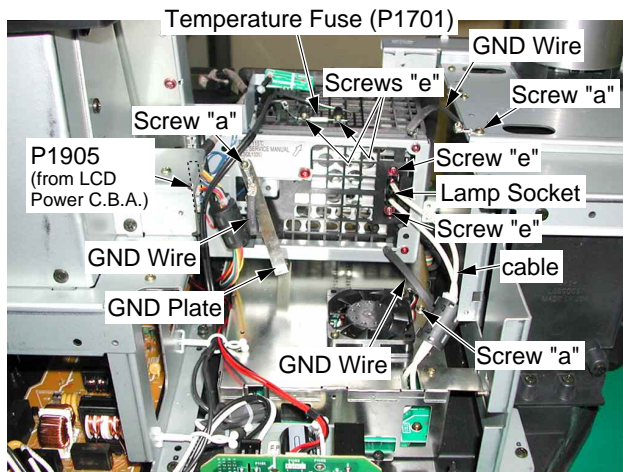
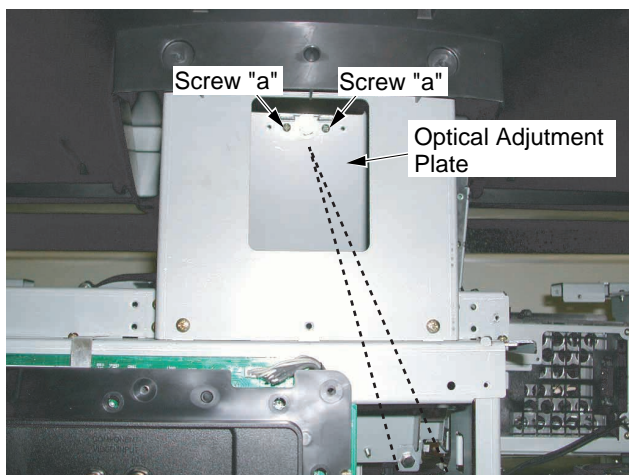


Fig. D2-5

7. Remove the 2 Screws on the Optical Adjustment Plate.



<Rear View>

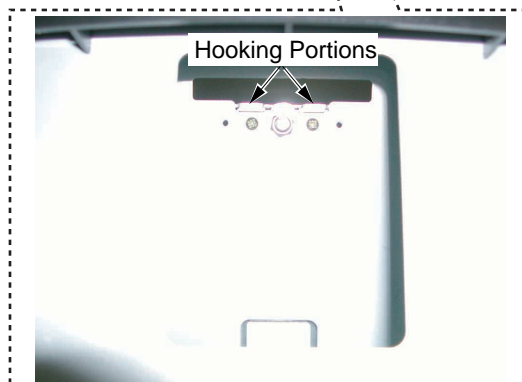
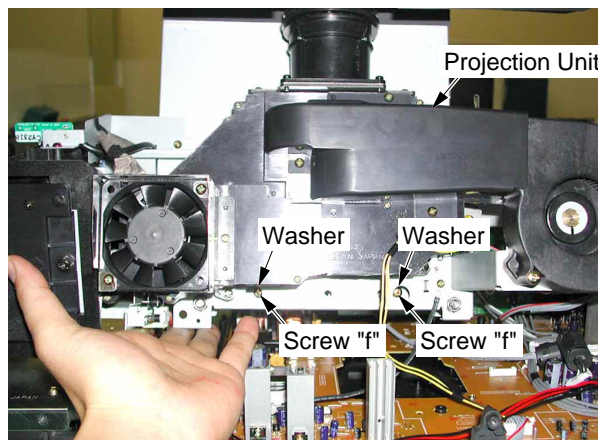


Fig. D2-6

8. Remove the 2 Screws and 2 Washers through the plate holes while holding the Projection Unit.
Tips on removal of the Projection Unit:
 To hold the Projection Unit, press it against the rear.

CAUTION:

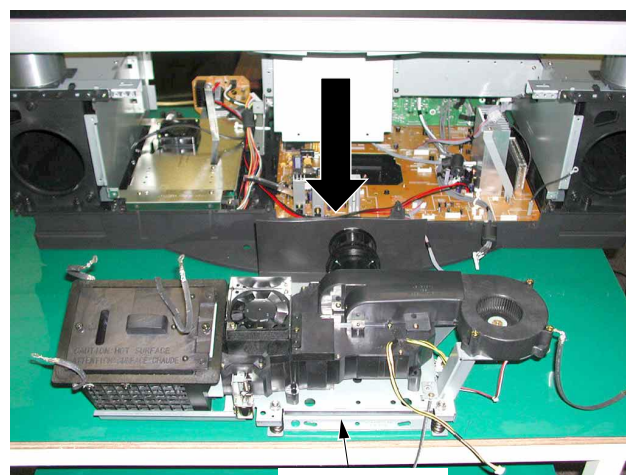
- Be sure to hold the Projection Unit while removing the 2 Screws and 2 Washers.
- Take extreme caution when removing the 2 Screws and 2 Washers so the Projection Unit does not fall out.



<Front View>

Fig. D2-7

9. Remove the Projection Unit from the unit carefully.



Projection Unit

Fig. D2-8

10. 1) Peel off the Light Prevention Plate on the Projection Unit.
- 2) Remove the Lamp from the Projection Unit.

CAUTION:

After removing the Projection Unit, take out the Light Prevention Plate and the Lamp from the Projection Unit once and keep them. Then, be sure to install the Light Prevention Plate and the Lamp into the new Projection Unit for replacement.

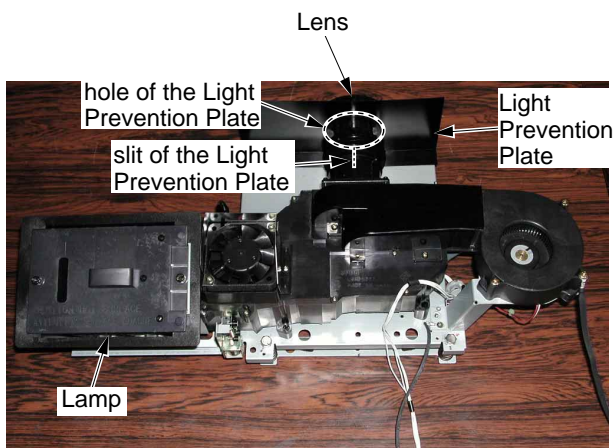


Fig. D2-9

Reassembly Notes for Light Prevention Plate:

- 1) Insert the hole of the Light Prevention Plate to the Projection Lens while opening slit.
- 2) Contact it against the ring of the Projection Lens and paste with double-sided adhesive tape as shown.

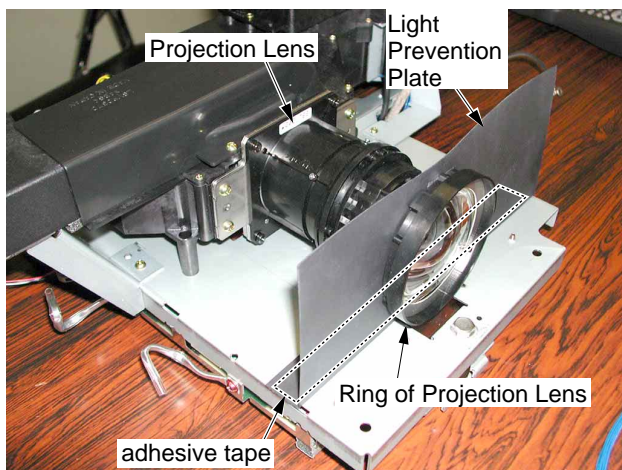
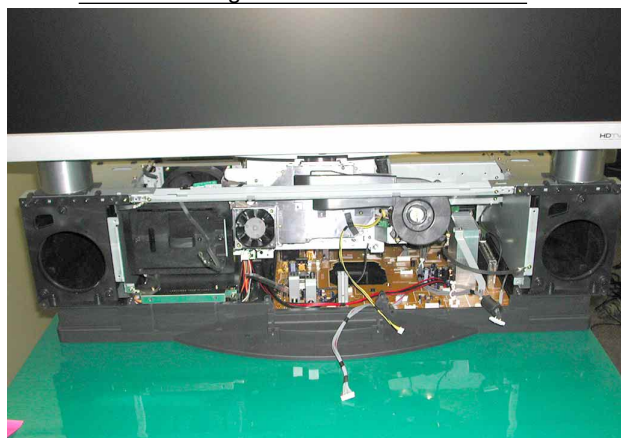


Fig. D2-10

REMOVAL OF THE AUDIO POWER C.B.A., THE DUCT FAN, THE LCD POWER C.B.A., THE POWER FAN AND THE TEMPERATURE FUSE

1. Remove the Rear Cover, the AV Front Door, the Front Cover L Unit, the Front Cover R Unit, the Center Panel Unit, the Lamp Cover and the Base Front Panel Unit. Refer to Steps 1~7 in "HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A."

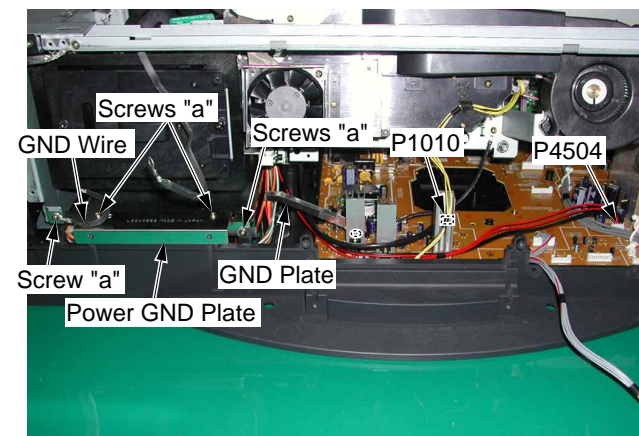
After removing the Base Front Panel Unit



<Front View>

Fig. D3-1

2. 1) Disconnect Connectors P1010, P4504 on the TV Main C.B.A.
2) Remove the only one Screw of the GND Plate.
3) Remove the Screw of the GND Wire.
4) Remove the Power GND Plate by removing 2 Screws.



<Front View>

Fig. D3-2

3. 1) Disconnect Connector P804 on the TV Main C.B.A. and release it from the clumper.
2) Disconnect Connector P1101 on the Audio Power C.B.A. and release it from the clumper.
3) Remove the Duct Fan Unit by removing 4 Screws and releasing the Hooking Portions.

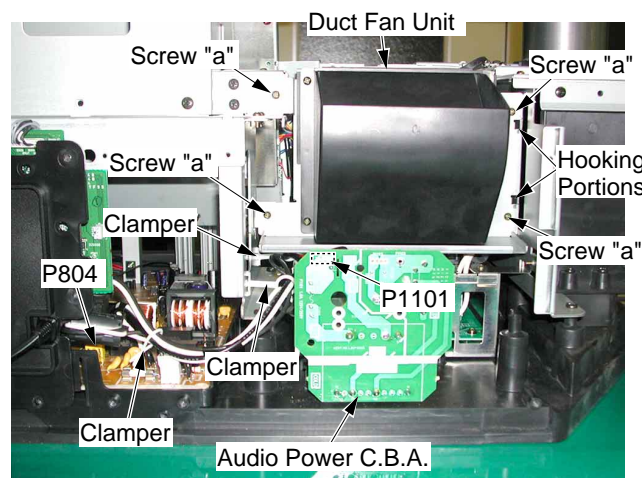
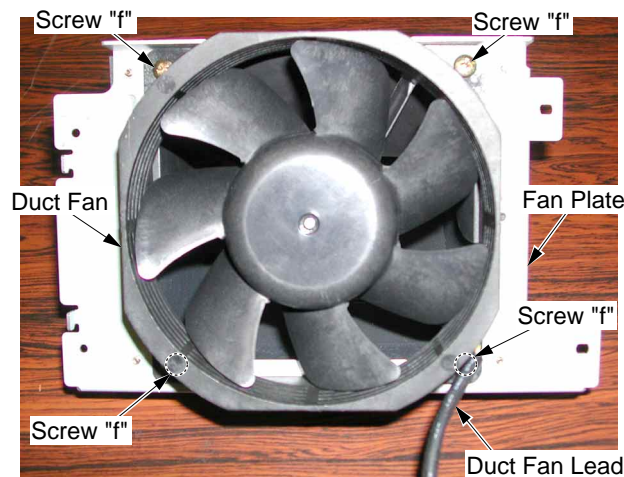


Fig. D3-3-1

<Removal of the Duct Fan from the Duct Fan Unit>

Remove the Duct Fan from the Duct Fan Unit by removing 4 Screws.



<Front View>

Fig. D3-3-2

Reassembly Notes for Duct Fan Lead:

- Install the Duct Fan into the Fan Plate so that the Duct Fan Lead is positioned as shown.
- The Duct Fan is an exhaust fan.

4. Remove the Audio Power C.B.A. by removing the 2 Screws and releasing the 2 Bosses and release it from the clamper.

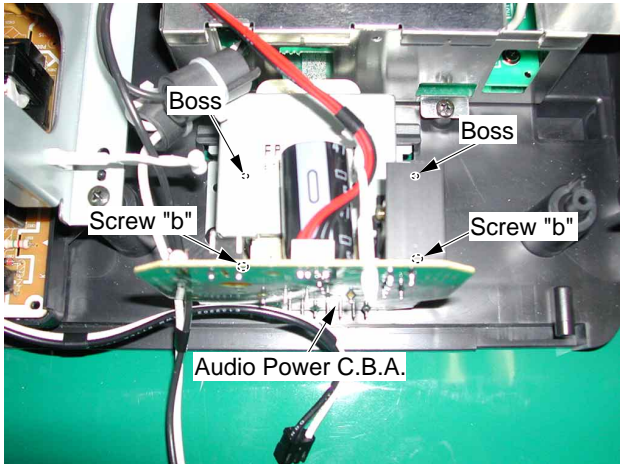


Fig. D3-4

5. 1) Disconnect the cable from the Lamp Socket by removing the 2 Screws.
2) Remove the Temperature Fuse on the Lamp House by removing the 2 Screws. Disconnect Connector P1905 on the LCD Main C.B.A.
3) Remove the Screw of the GND Plate and the GND Wire.
4) Remove the GND Plate by removing the 2 Screws.
5) Remove the Screw on the GND Wire.

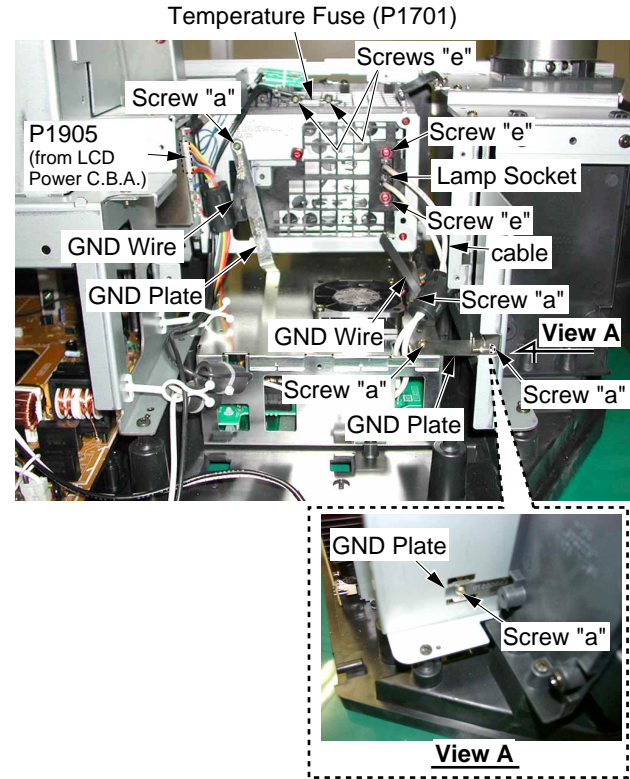
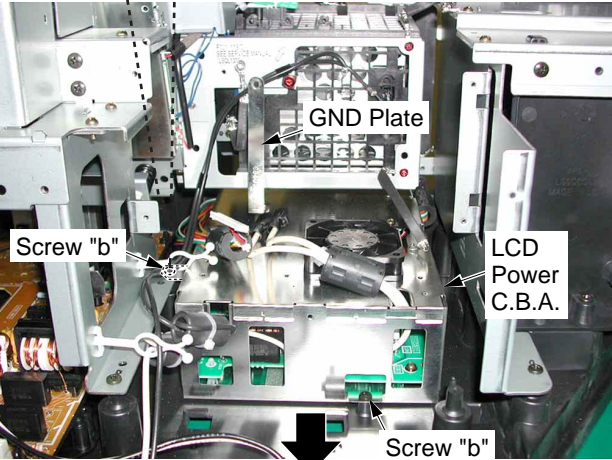
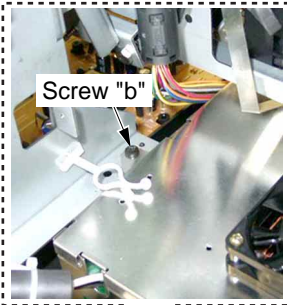
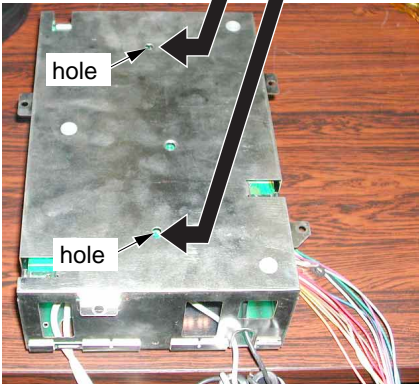
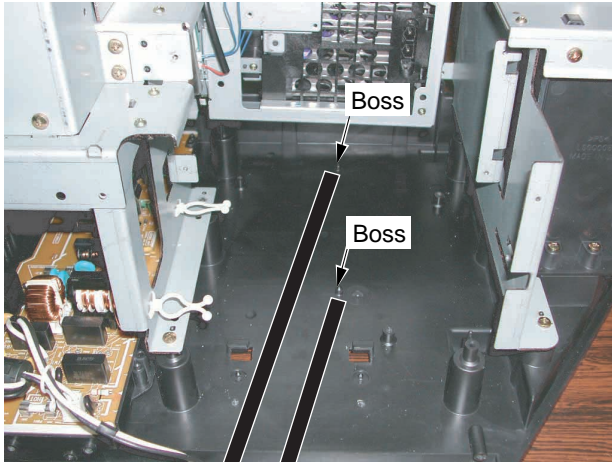


Fig. D3-5

6. 1) Remove the 2 Screws on the LCD Power C.B.A. Then, lift up and slide the LCD Power C.B.A. by releasing the 2 Bosses.
2) Remove the GND Plate on the LCD Power C.B.A.



Lift up and slide



<Bottom View of LCD Power C.B.A.>

Fig. D3-6-1

Reassembly Notes for LCD Power C.B.A.:

Install the LCD Power C.B.A. so that the bosses are inserted into the holes on the bottom side of the LCD Power C.B.A.

Tips on installation of the LCD Power C.B.A.

Wind the Connector Lead around the LCD Power C.B.A. as shown. And then install it.

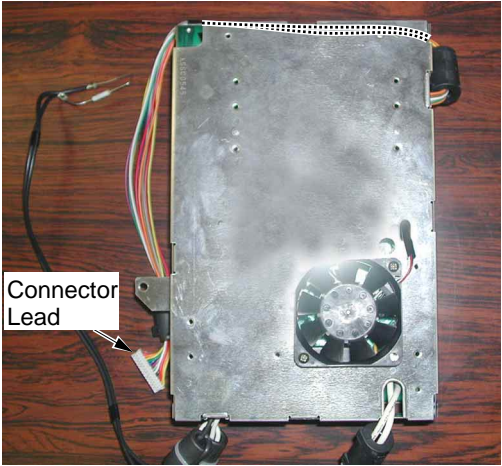


Fig. D3-6-2

<Removal of the Power Fan and the Temperature Fuse from the LCD Power C.B.A.>

Open the Top Shield Plate of the LCD Power C.B.A. by releasing the Tabs around the Top Shield Plate. Then, remove the Power Fan by removing the 2 Screws and disconnect Connector P1703 on the LCD Power C.B.A.

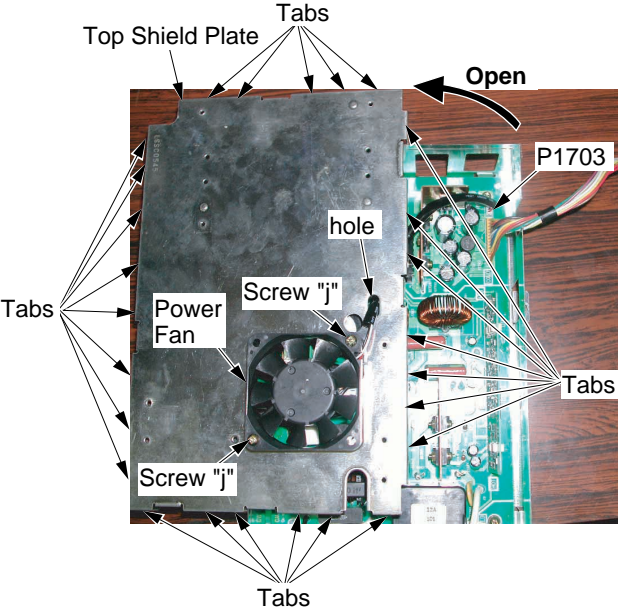
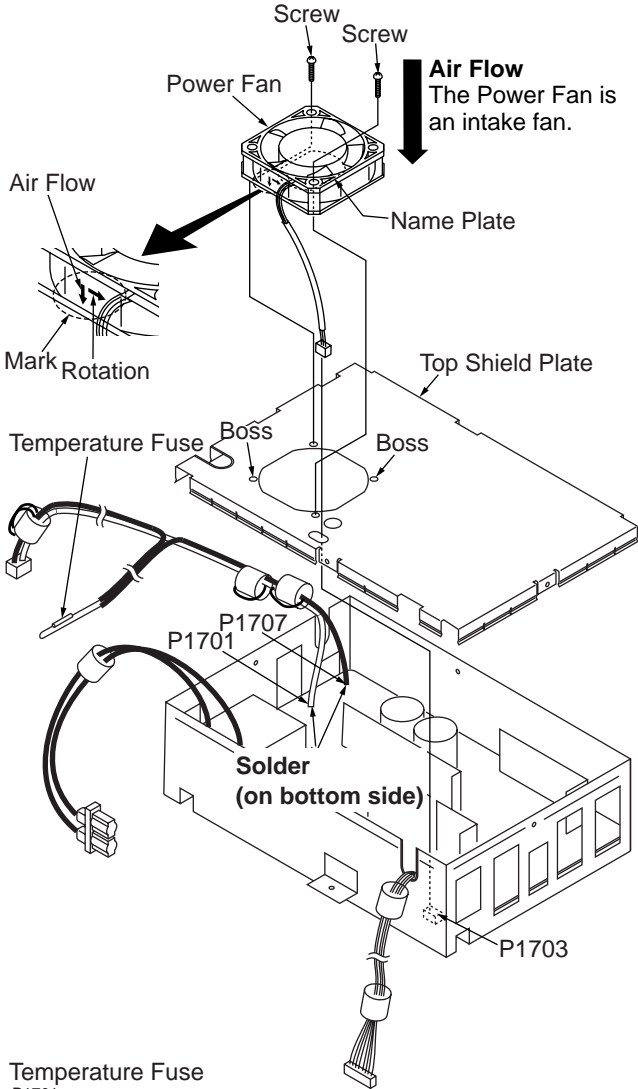


Fig. D3-7

Reassembly Notes for Power Fan:

Install the Power Fan so that the name plate (manufacture's name etc.) faces in (not visible from the outside) as shown.



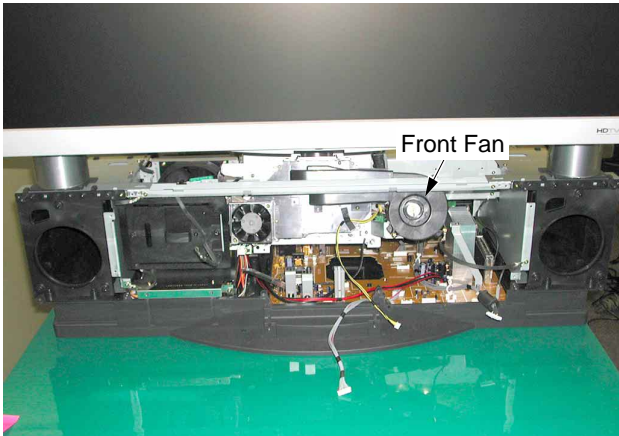
Temperature Fuse
P1701
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE NUMBER LSJA0411 (115 °C).

Fig. D3-8

REMOVAL OF THE FRONT FAN FROM THE UNIT

1. Remove the Rear Cover, the AV Front Door, the Front Cover L Unit, the Front Cover R Unit, the Center Panel Unit, the Lamp Cover and the Base Front Panel Unit. Refer to Steps 1~7 in "HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A."

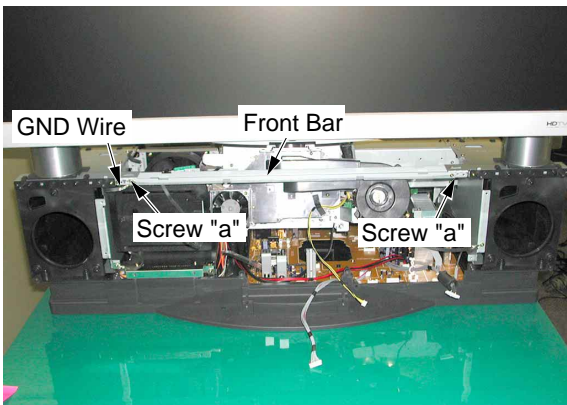
After removing the Base Front Panel Unit



<Front View>

Fig. D4-1-1

2. Remove the Front Bar by removing the 2 Screws.



<Front View>

Fig. D4-1-2

3. Remove the Front Fan by removing the 3 Screws and disconnecting Connector P1901 on the LCD Main C.B.A.

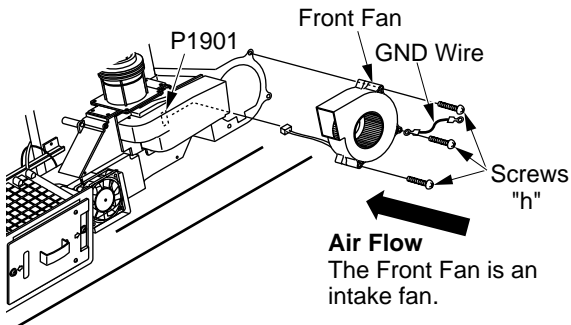
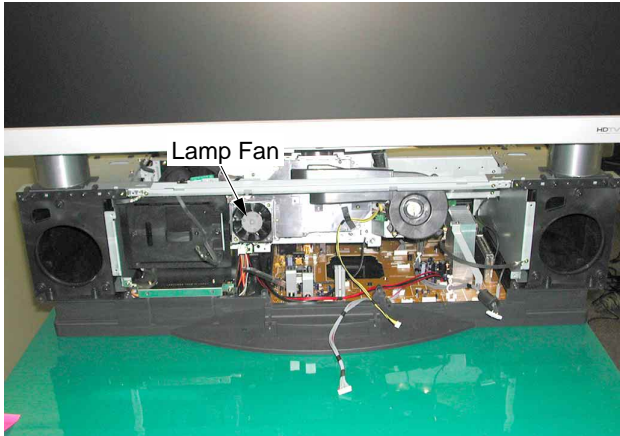


Fig. D4-1-3

REMOVAL OF THE LAMP FAN FROM THE UNIT

1. Remove the Rear Cover, the AV Front Door, the Front Cover L Unit, the Front Cover R Unit, the Center Panel Unit, the Lamp Cover and the Base Front Panel Unit. Refer to Steps 1~7 in "HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A."

After removing the Base Front Panel Unit



<Front View>

Fig. D4-2-1

2. Remove the Lamp Fan and Shield by removing the 2 Screws and disconnecting Connector P1902 on the LCD Main C.B.A.

Note:

The Air Flow direction is practically the opposite of the arrow printed on the Lamp Fan. When installing the Lamp Fan, be sure to install as shown.

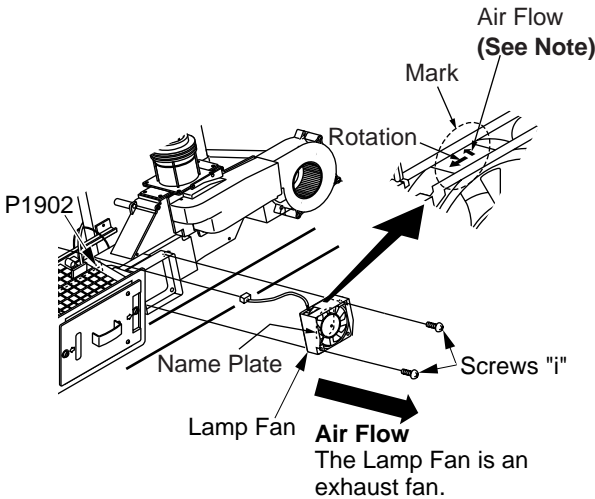


Fig. D4-2-2

Reassembly Notes for Lamp Fan:

Install the Lamp Fan so that the name plate (manufacture's name etc.) faces in (not visible from the outside) as shown.

REMOVAL OF THE SCREEN UNIT, THE MIRROR AND THE BACK PANEL

- 1. Remove the Rear Cover, the AV Front Door, the Front Cover L Unit and the Front Cover R Unit. Refer to Steps 1~4 in "HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A."
- 2. Remove the only 10 Screws of the Back Panel as shown. Then, remove the Screen Unit from the front side.

Note:

The Screen Unit is supplied as a unit only. The individual parts in Screen Unit are not supplied separately.

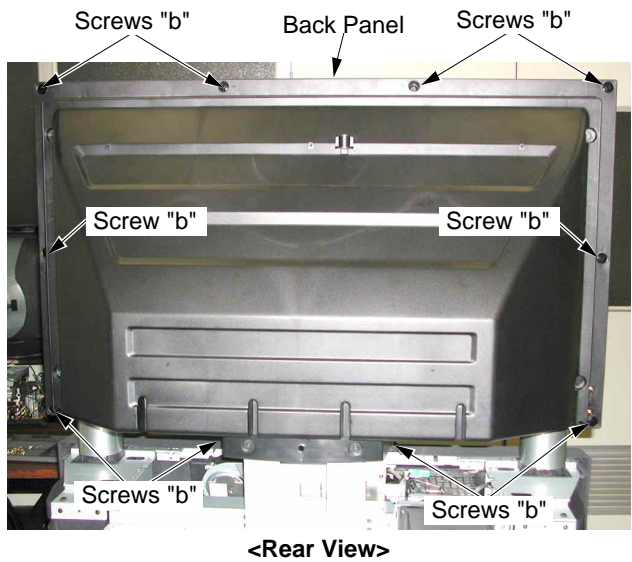
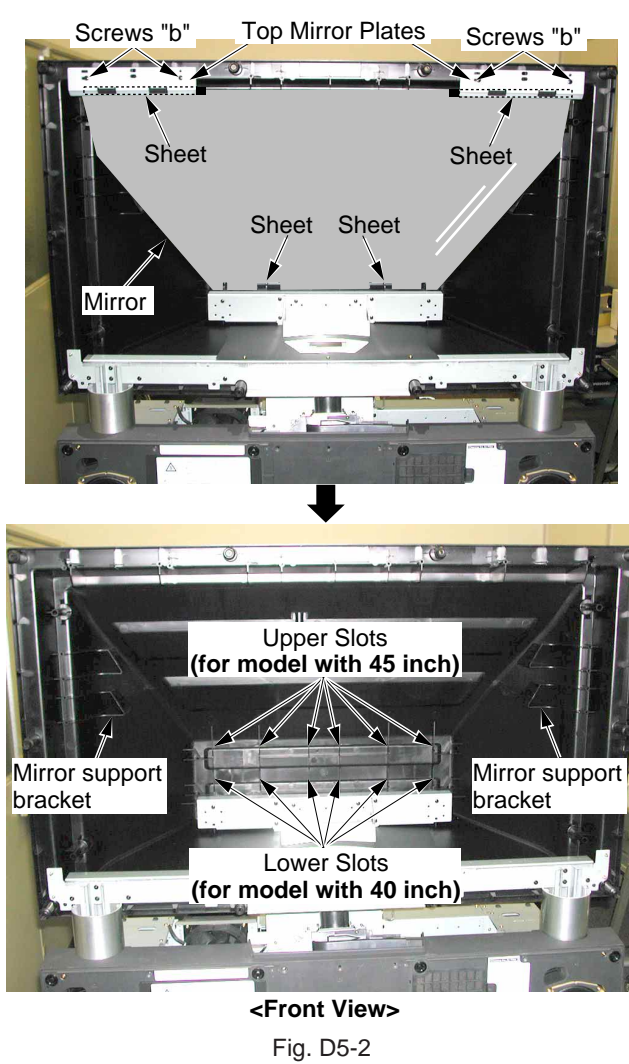


Fig. D5-1

- 3. 1) Remove the 2 Top Mirror Plates by removing the 4 Screws.
- 2) Remove the Mirror from the top by releasing the slots carefully.

Note:

When removing, be careful that the Mirror does not fall down.



Reassembly Notes for Mirror:

Install the Mirror as following procedures.

- 1) Peel the Protection Sheet approx. 20 mm (maximum 22 mm) from the top and bottom edges of the Mirror to place the Sheet. Then, place the 4 sheets on the top and bottom edges of the Mirror as shown.

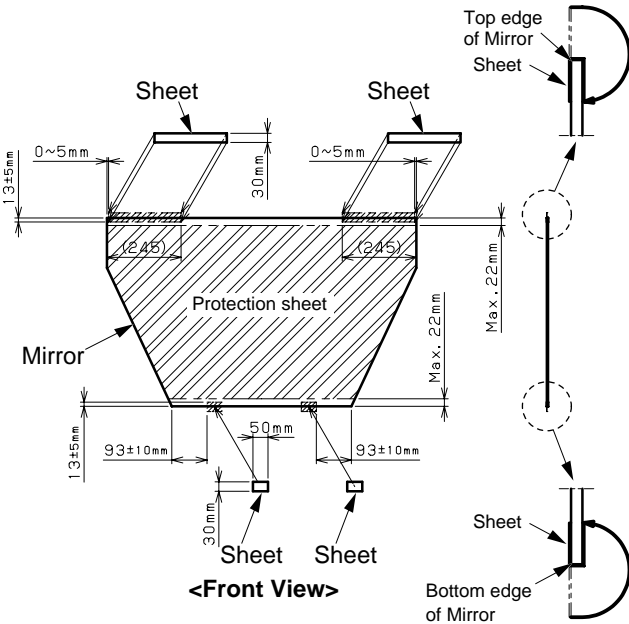


Fig. D5-3-1

- 2) When handling the Mirror, do not touch the Mirror surface. Be sure to hold the sheet portions of the Mirror.
- 3)

CAUTION:

Insert the Mirror from the top into the lower slots (For model with 40 inch Mirror) or into the upper slots (For model with 45 inch Mirror) of the Back Panel carefully avoiding the Mirror Support Brackets. Otherwise, the Mirror may crack. Then, the Mirror is secured with the Mirror Support Brackets.

- 4) Install the 2 Top Mirror Plates on the Mirror and tighten the 4 Screws.
- 5) Peel the Protection Sheet from the Mirror.

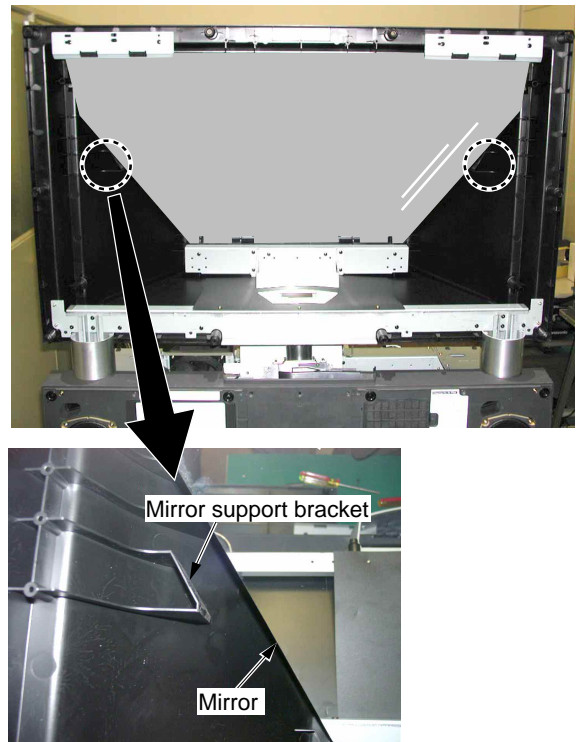


Fig. D5-3-2

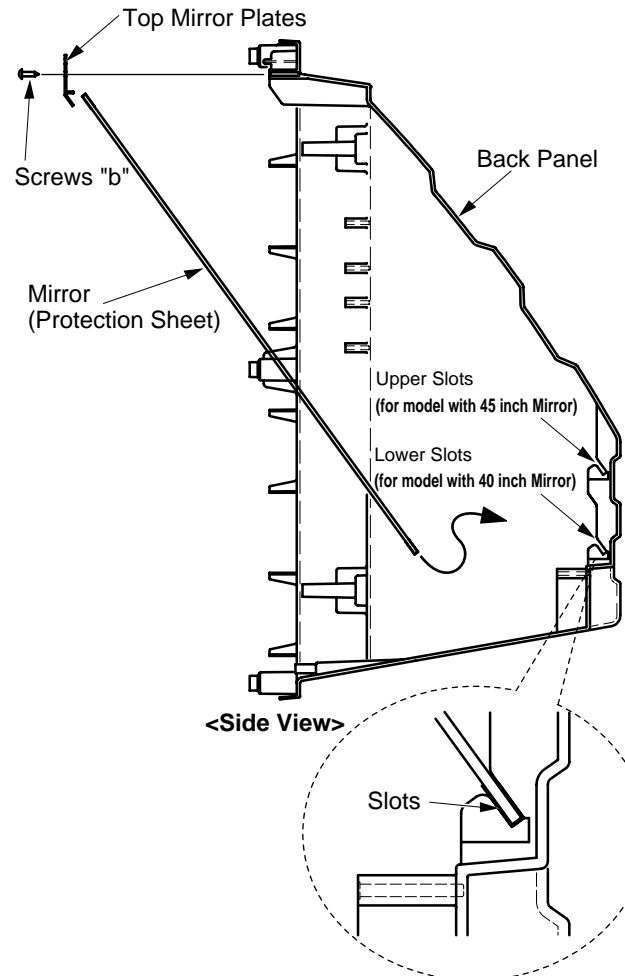
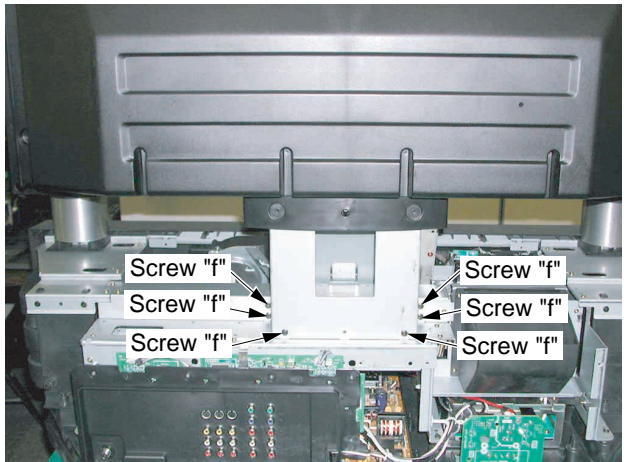
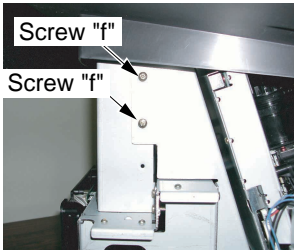


Fig. D5-4

4. 1) Remove the Light Prevention Sheet by removing the 3 Screws.
- 2) Remove the Back Panel by removing the 18 Screws. Then, lift up the Back Panel.



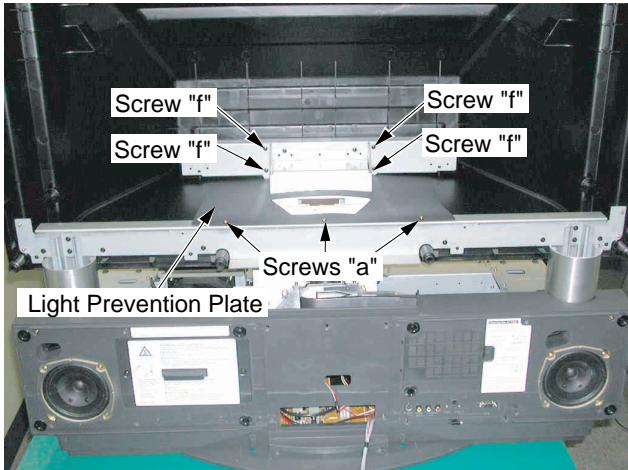
<Rear View>



<Side View>



Fig. D5-5



<Front View>

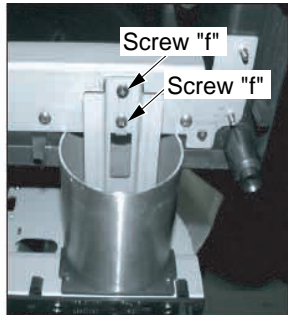
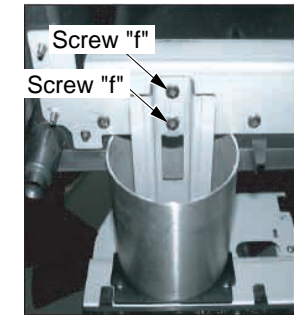
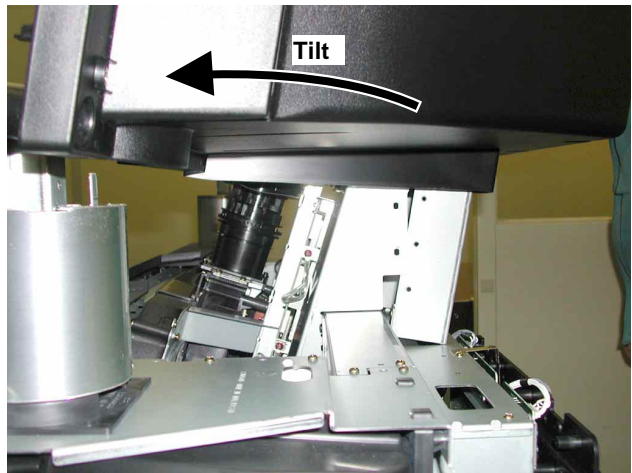
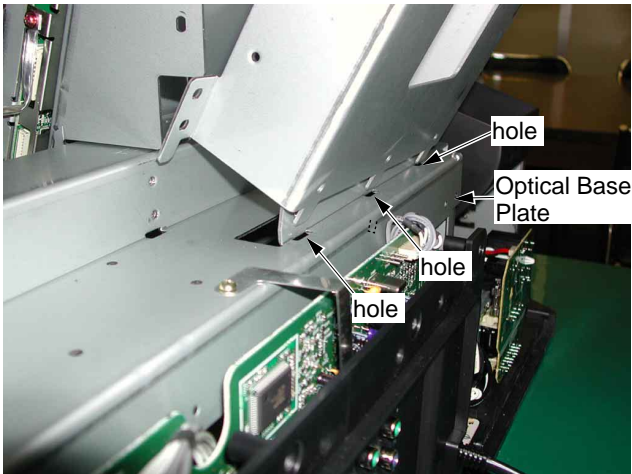
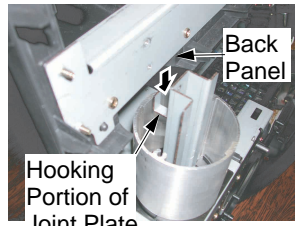


Fig. D5-6

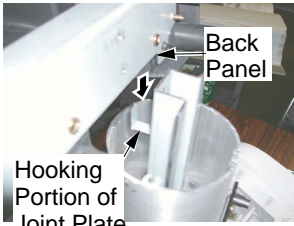
- Reassembly Notes for Back Panel:**
- 1) Insert the Back Panel to the holes of the Optical Base Plate.
 - 2) Tilt the Back Panel as indicated by the arrow and set the Back Panel Unit into the Hooking Portions of the Joint Plates as shown.



<Side View>



<Front View>
(left)



<Front View>
(right)

Fig. D5-7

REMOVAL OF THE FRONT JACK C.B.A., THE RGB JACK C.B.A., THE FRONT THERMISTOR C.B.A., THE LAMP COVER SWITCH C.B.A. AND THE SPEAKER

- 1. Disconnect Connector P2921 on the Lamp Cover Switch C.B.A. Remove the Lamp Cover Switch C.B.A. by removing the Screws.
- 2. Remove the Front Jack GND Plate B by removing the 3 Screws.
- 3. Remove the RGB Jack C.B.A. by removing the 2 Screws.
- 4. Remove the Front Jack C.B.A. and the Front Jack GWD Plate by removing the 3 Screws.
- 5. Peel the Joint Filter back slightly and remove the Front Thermistor C.B.A. by removing the Screws.

Reassembly Notes for Front Thermistor C.B.A.:

- 1) When installing the Front Thermistor C.B.A., set the Thermistor leads into the groove on the Base Front Panel Unit so that the thermistor is in the correct position as shown. Then, restick the Joint Filter securely.

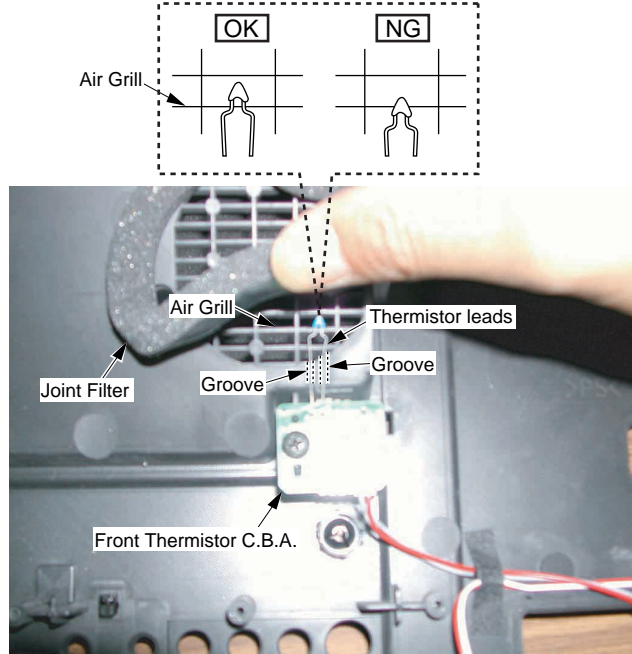


Fig. D6-1

- 6. Remove the Speaker -L and -R by removing the 8 Screws.

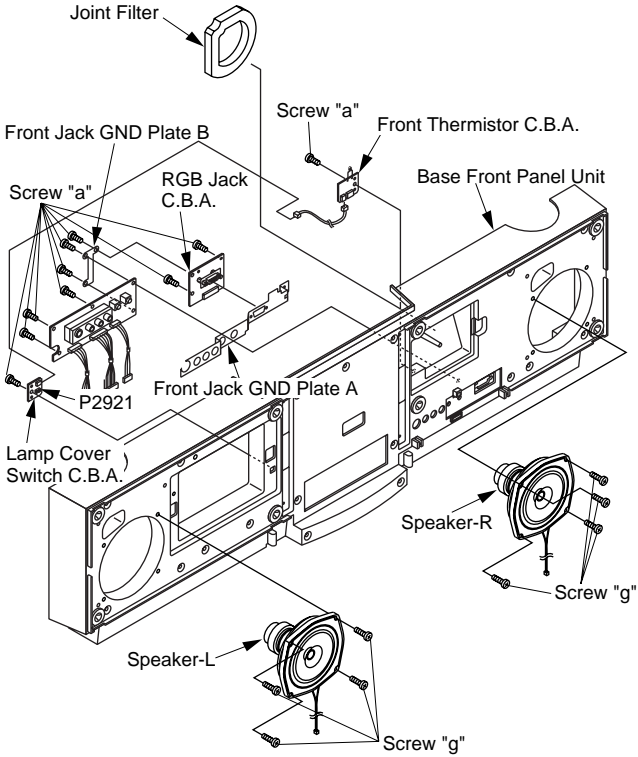
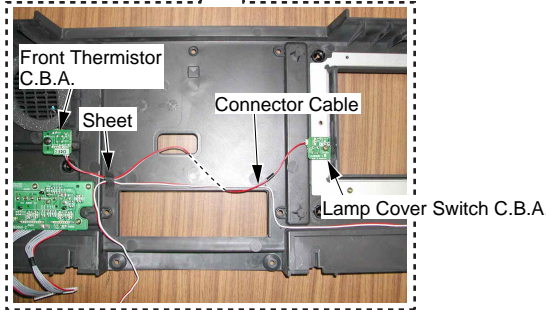
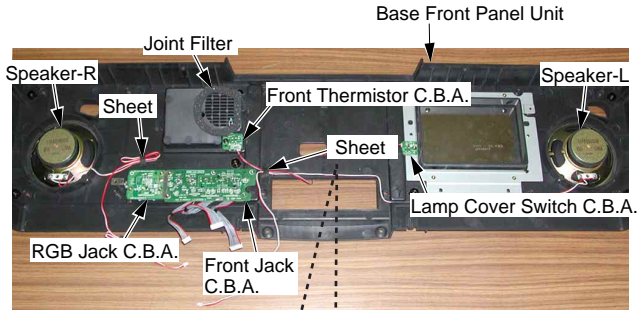


Fig. D6-2

Reassembly Notes for Speaker Leads:

- 1) Install the Speaker -L and -R which must be lined as shown. After installing the Speaker -L and -R, fasten the Speaker leads and place the sheets as shown.

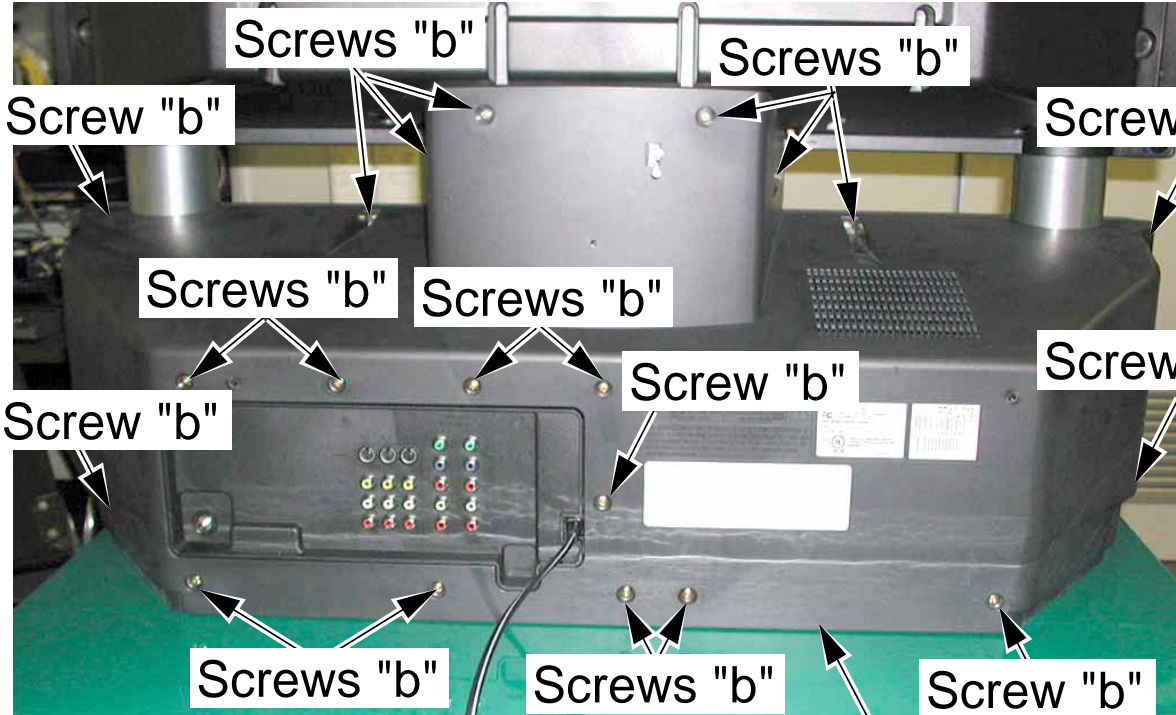


Wiring of Connector Cable

Fig. D6-3

LARGE VIEW FOR DISASSEMBLY/ASSEMBLY OF CABINET

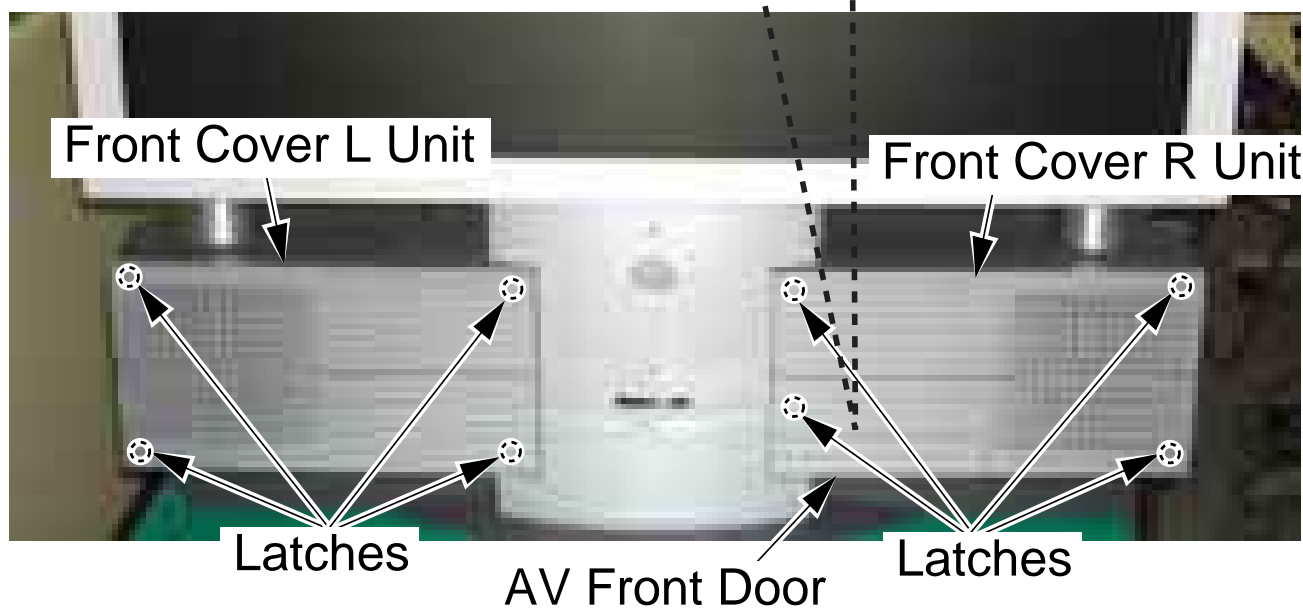
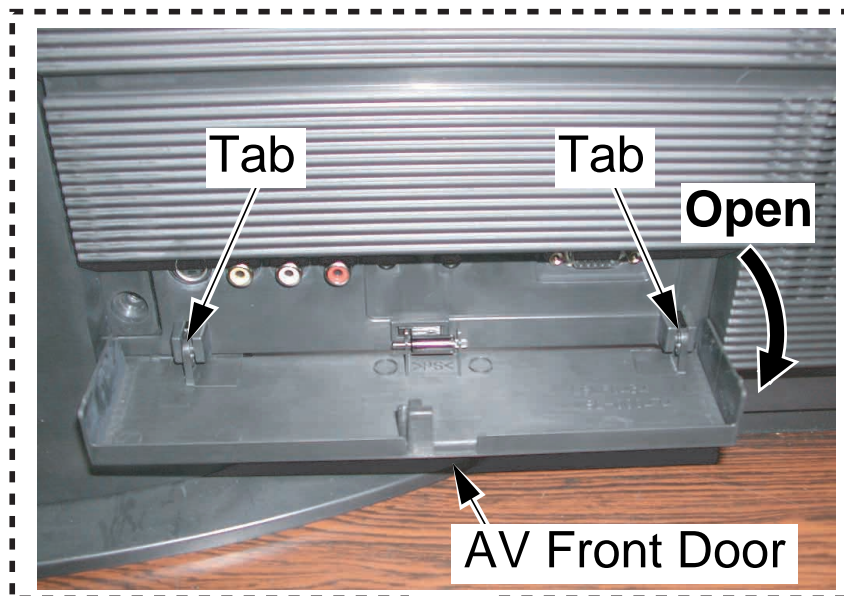
Here are the figures for the detailed reference.



Rear Cover

<Rear View>

Fig. D1-1



<Front View>

Fig. D1-2

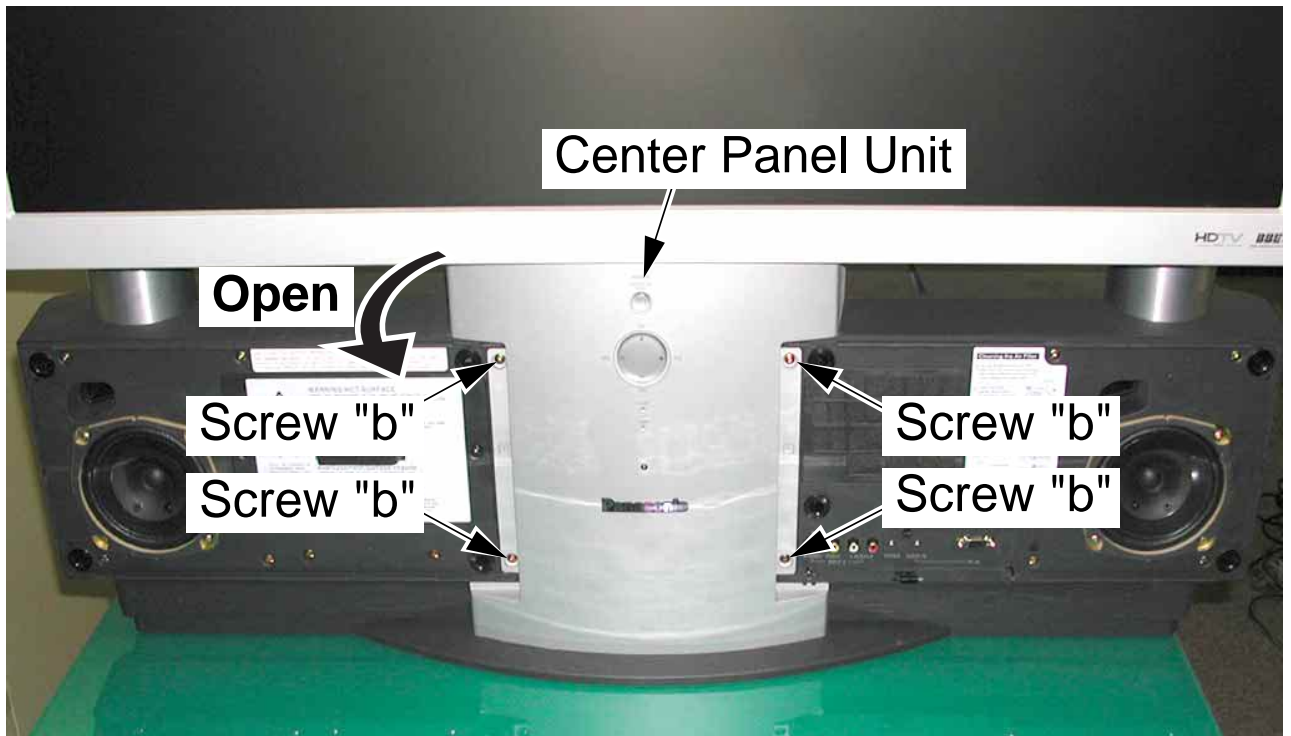


Fig. D1-3

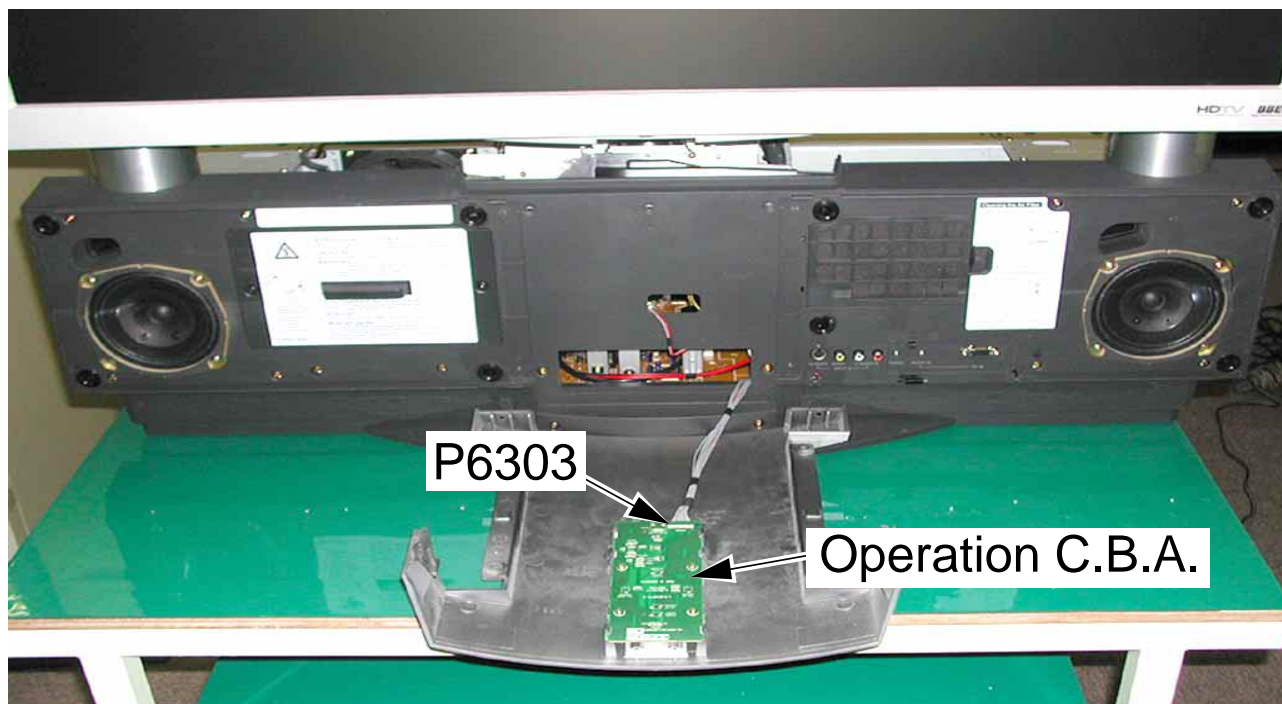


Fig. D1-4

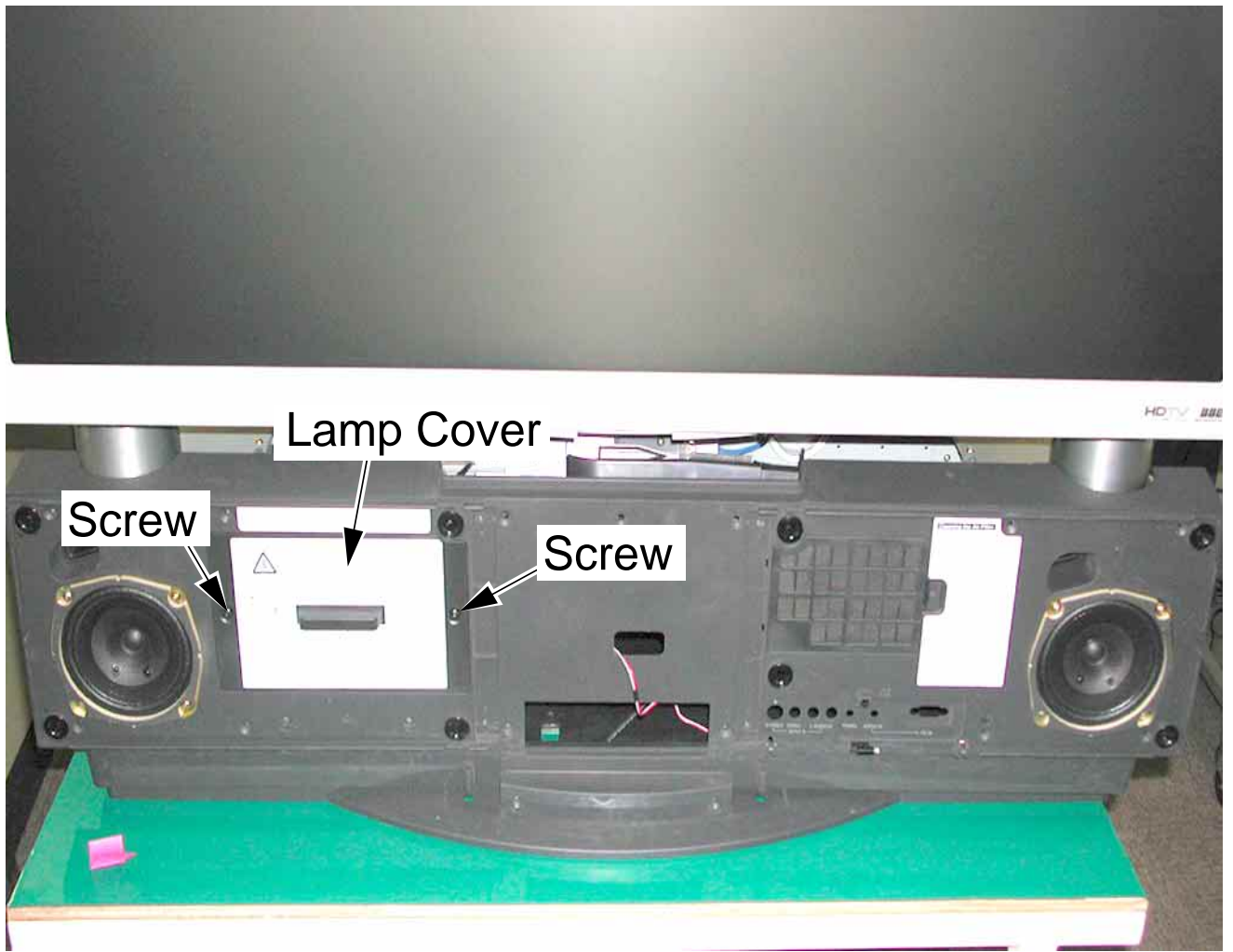


Fig. D1-5

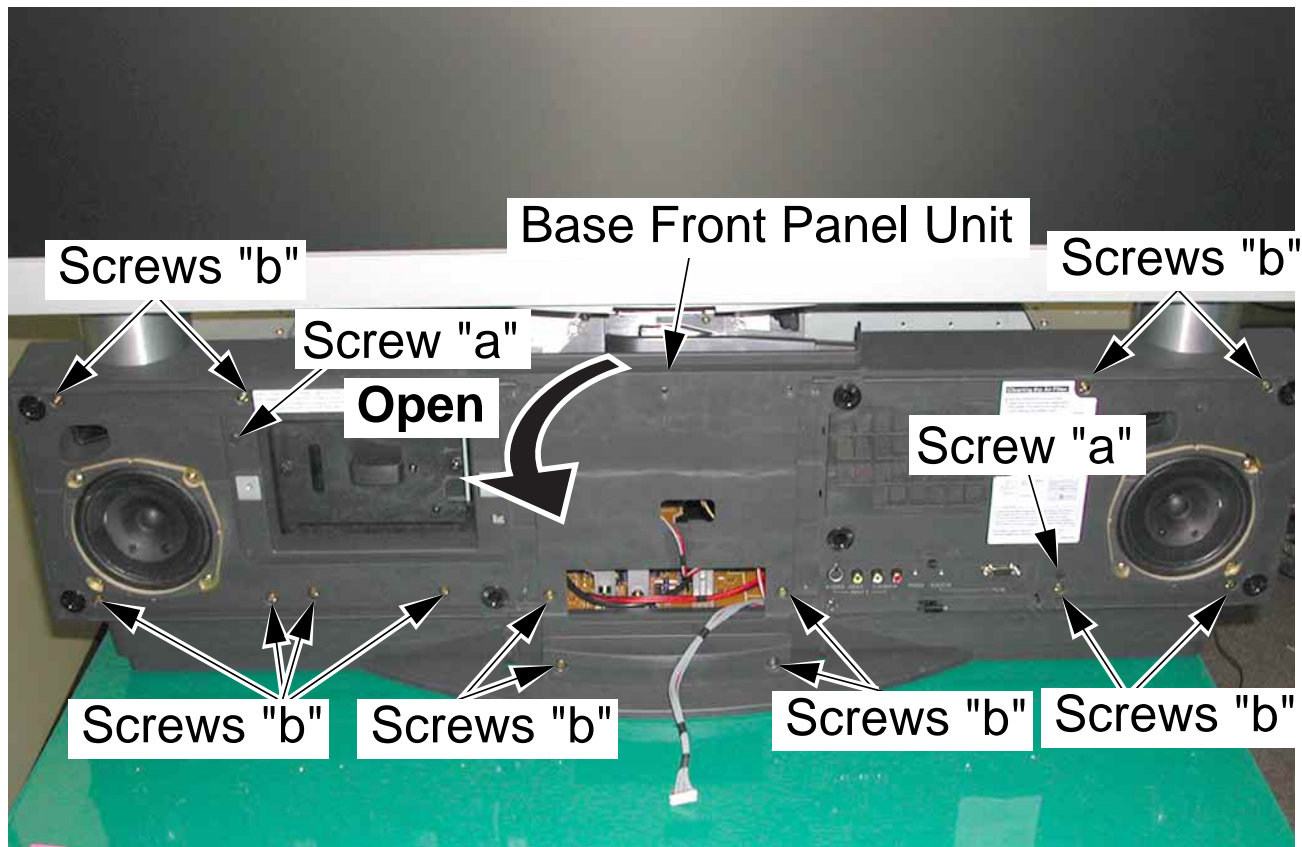


Fig. D1-6

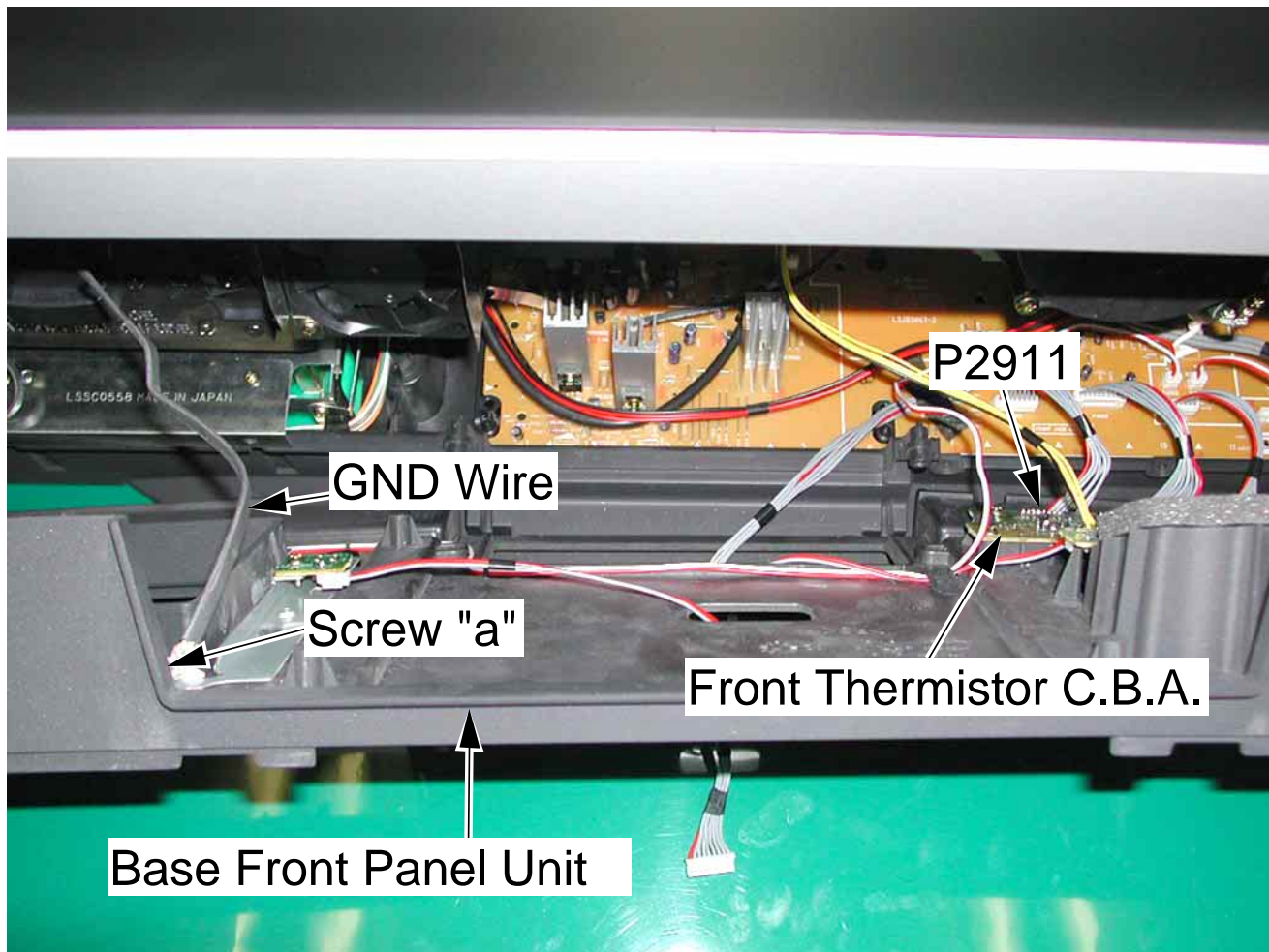
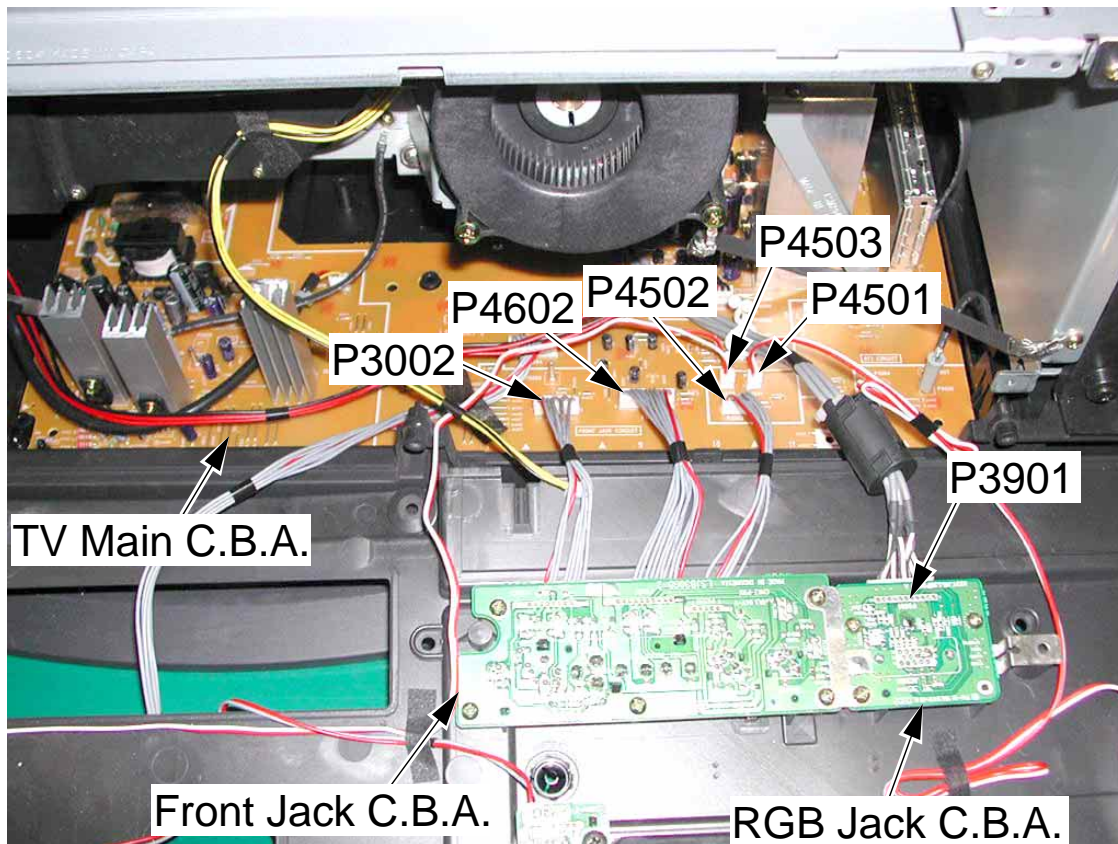
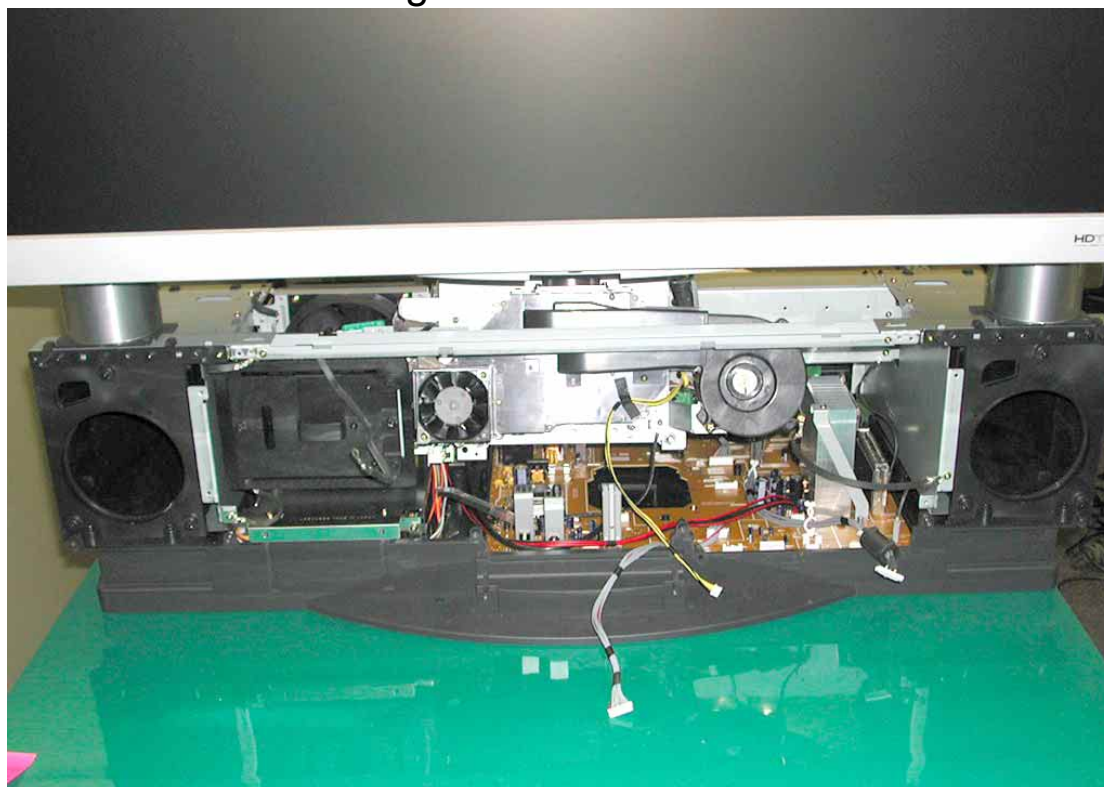


Fig. D1-7



After removing the Base Front Panel Unit



<Front View>

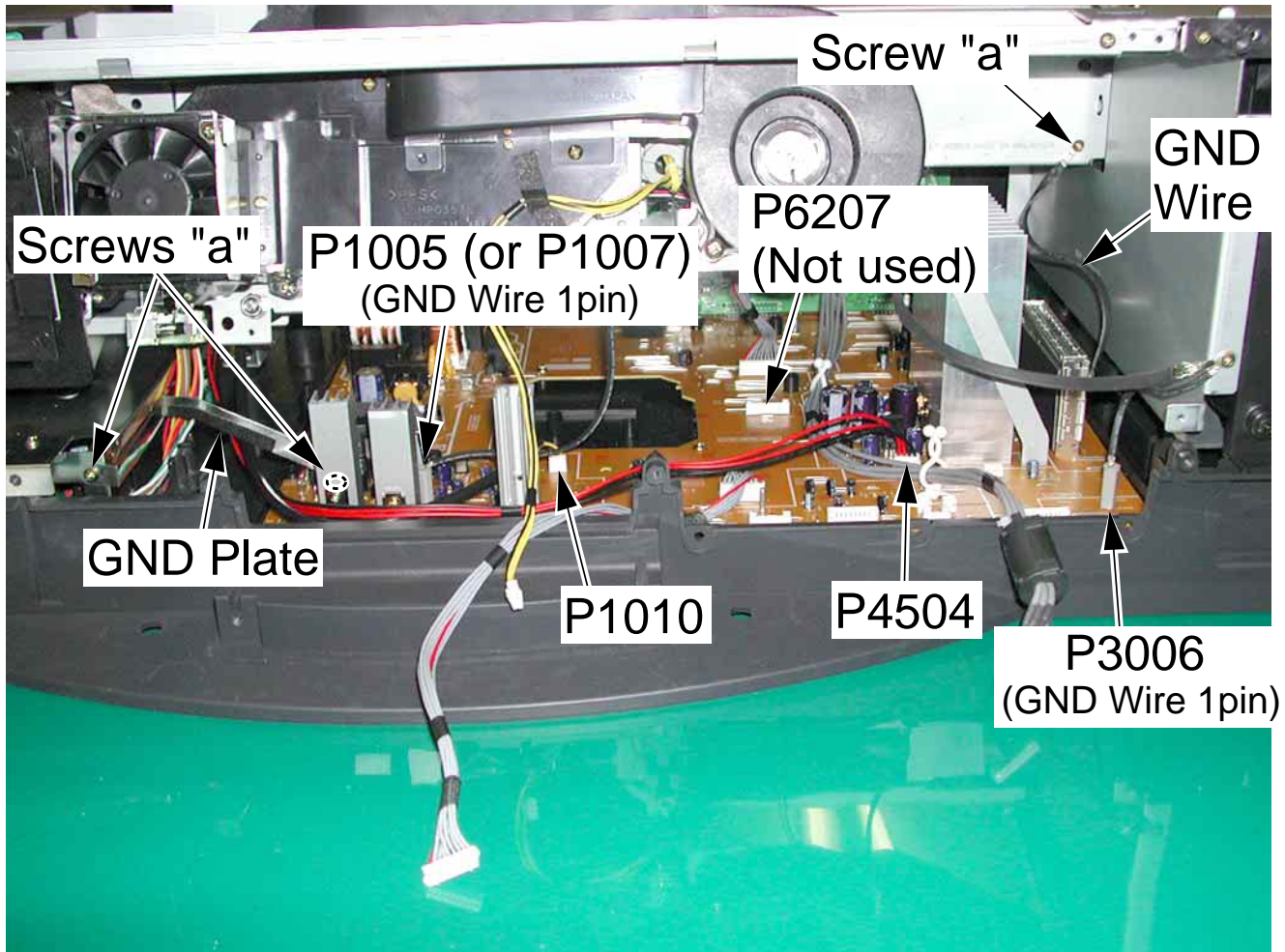


Fig. D1-9

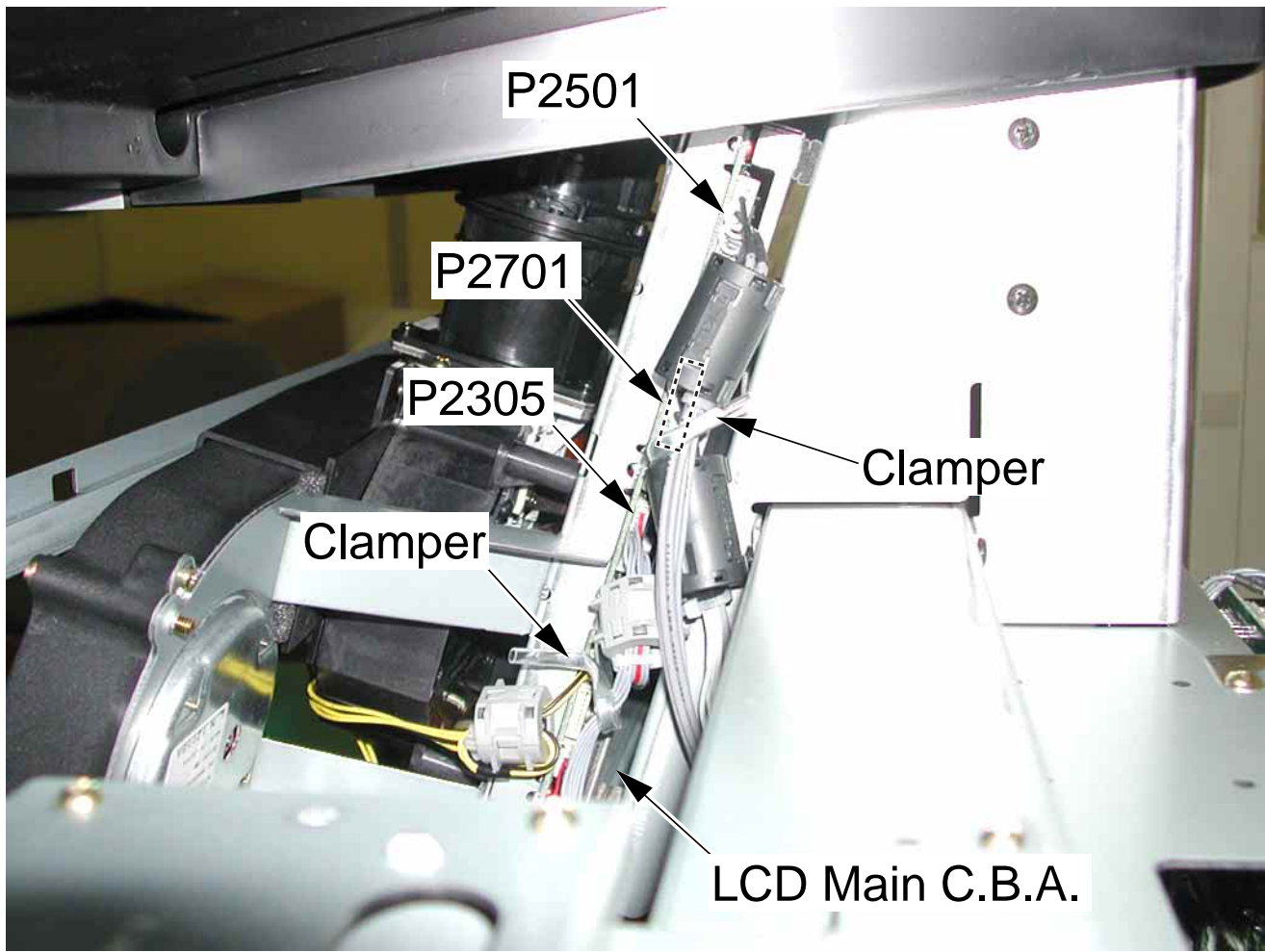


Fig. D1-10

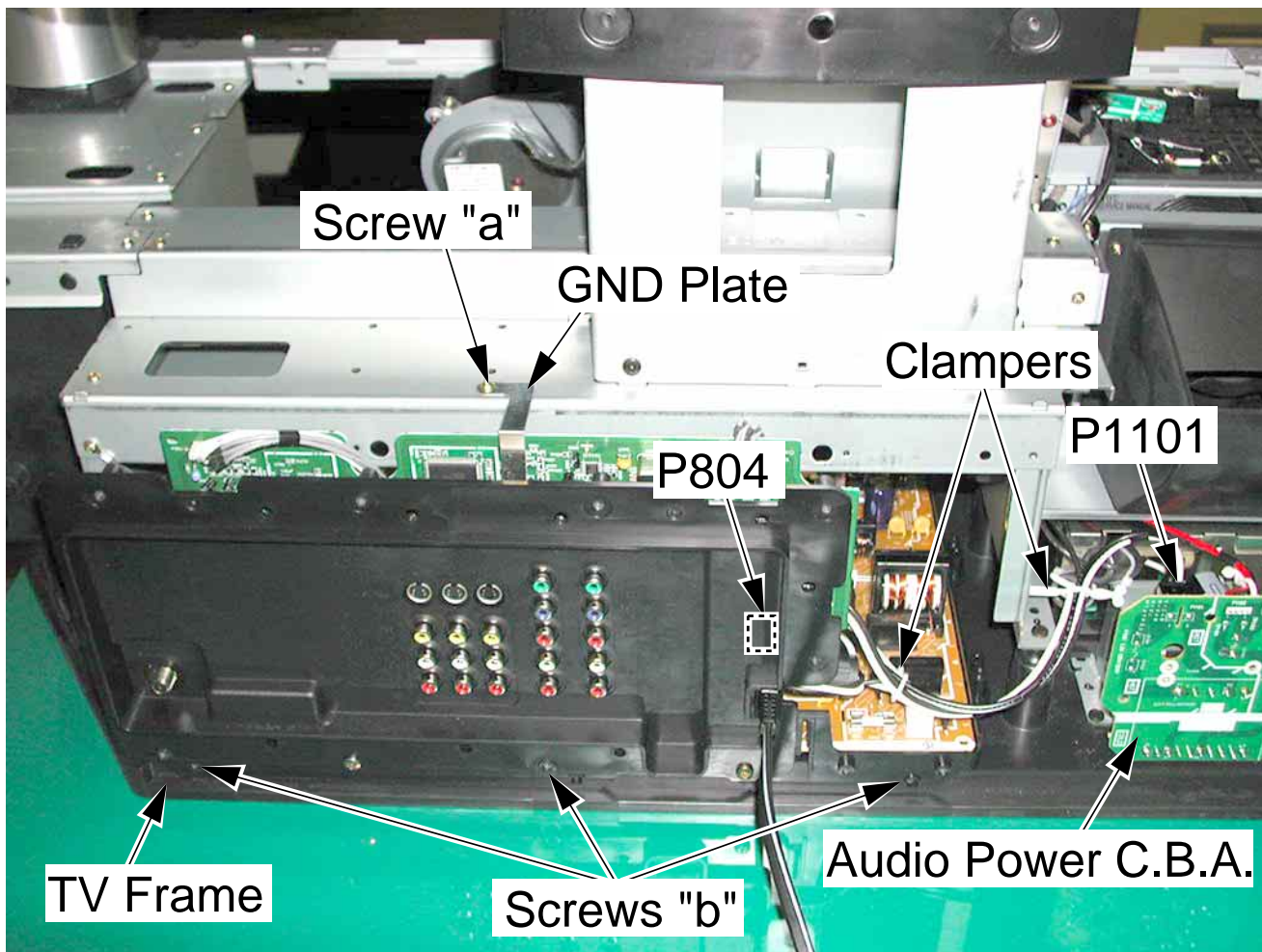


Fig. D1-11

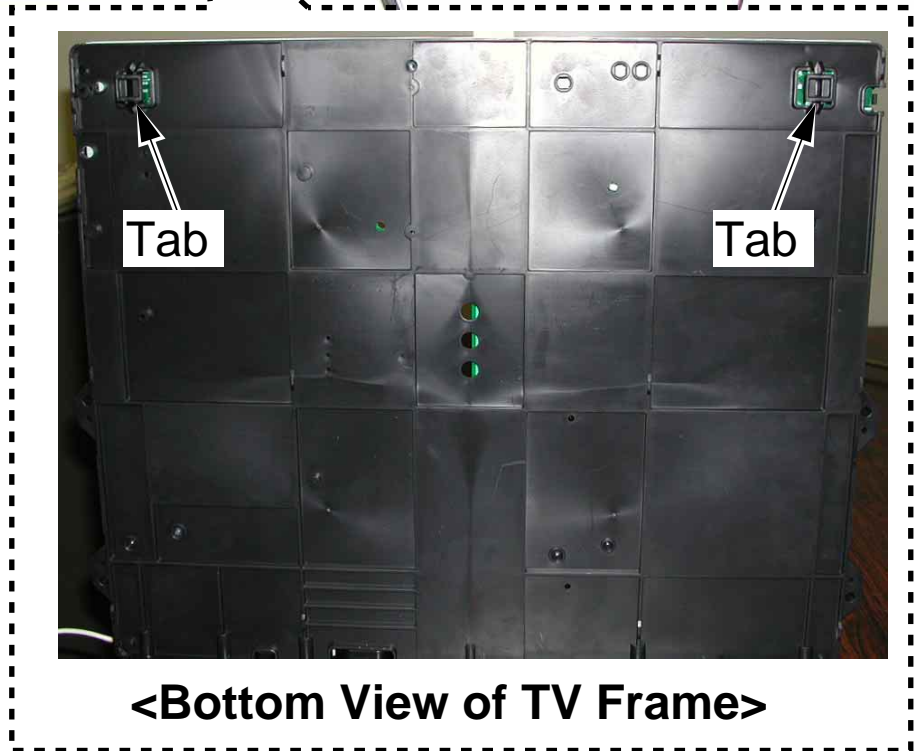
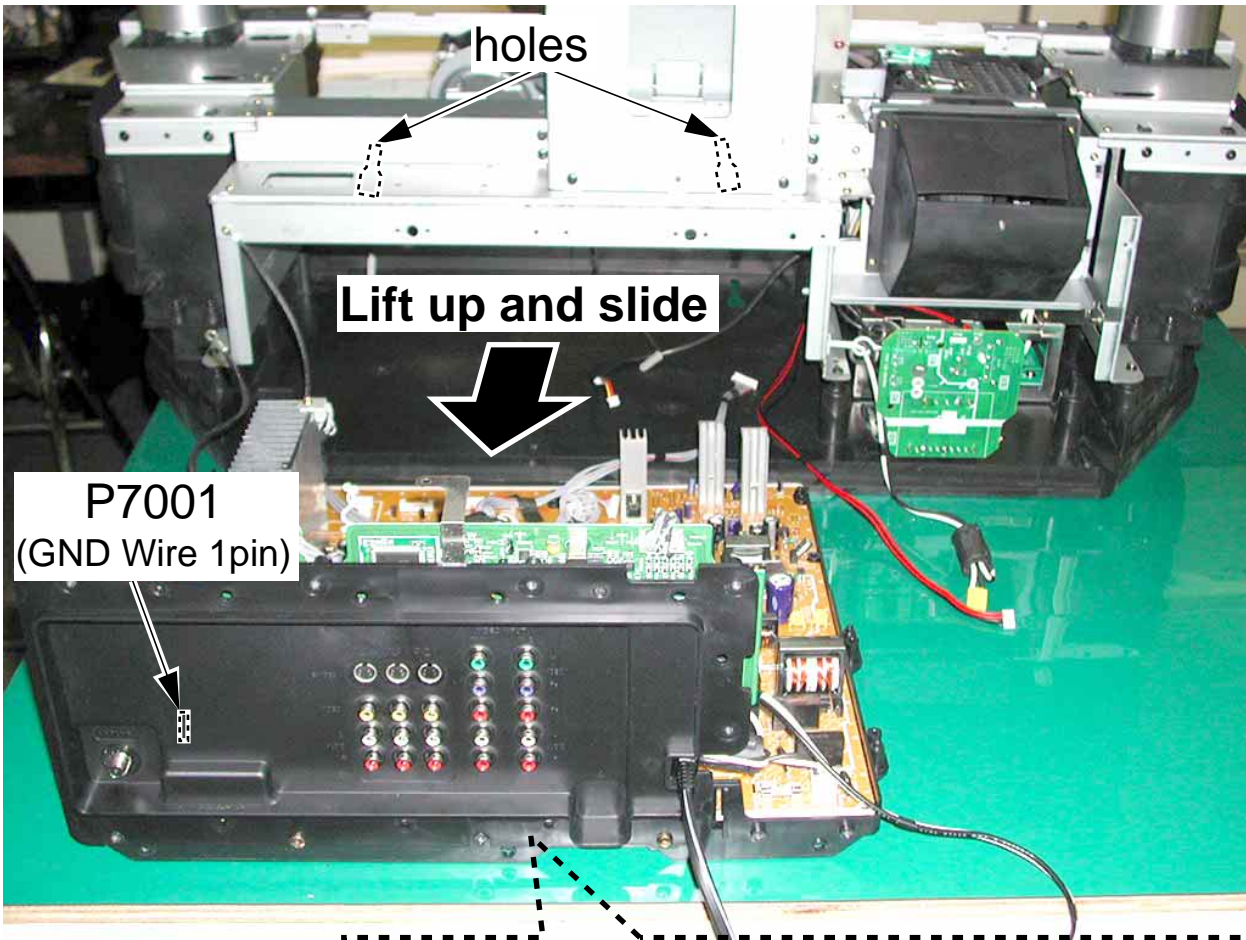
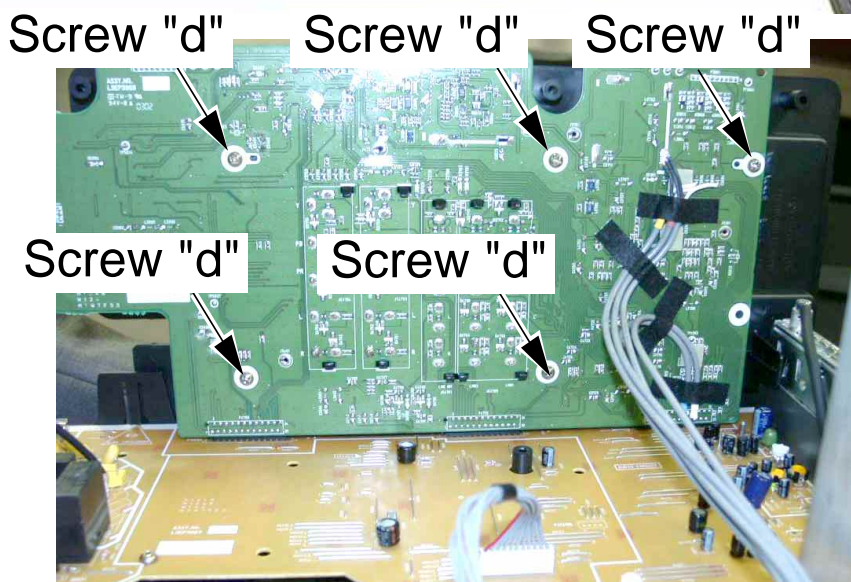
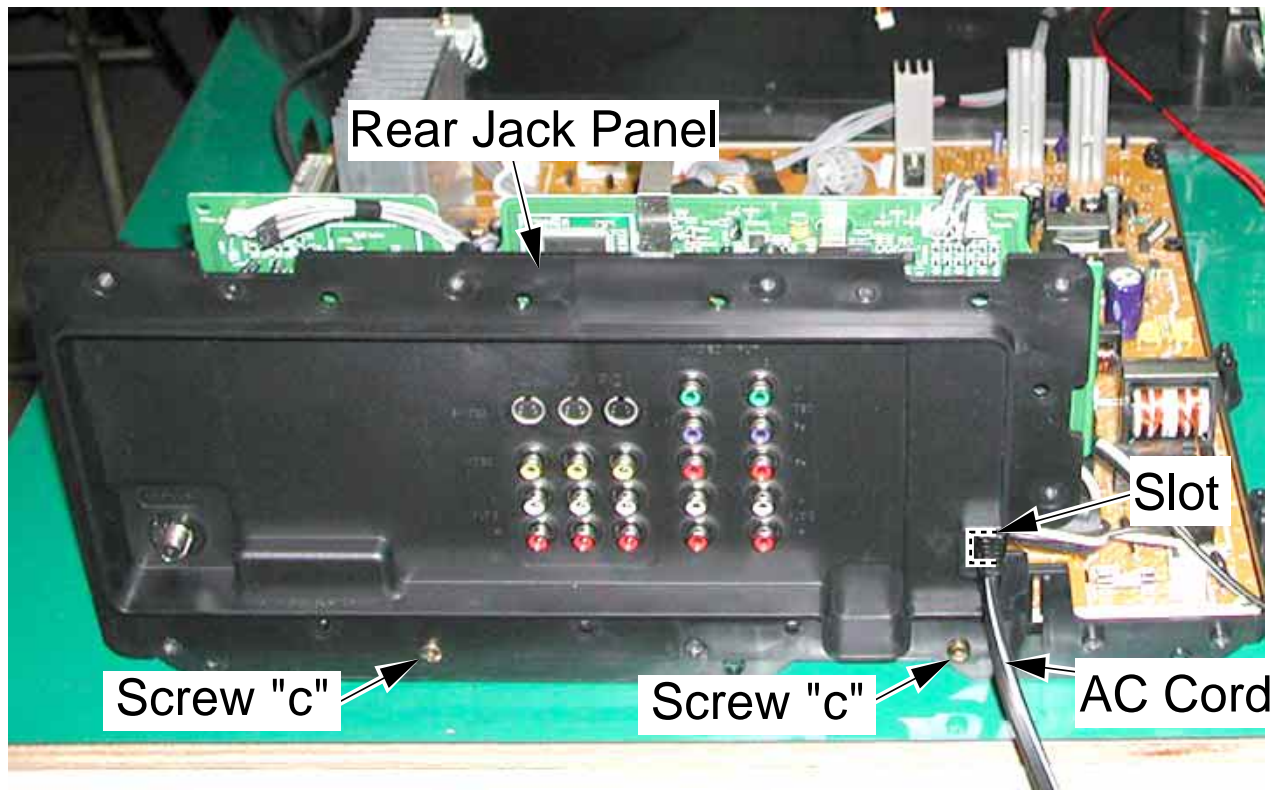


Fig. D1-12



<Back of Rear Jack C.B.A.>

Fig. D1-13

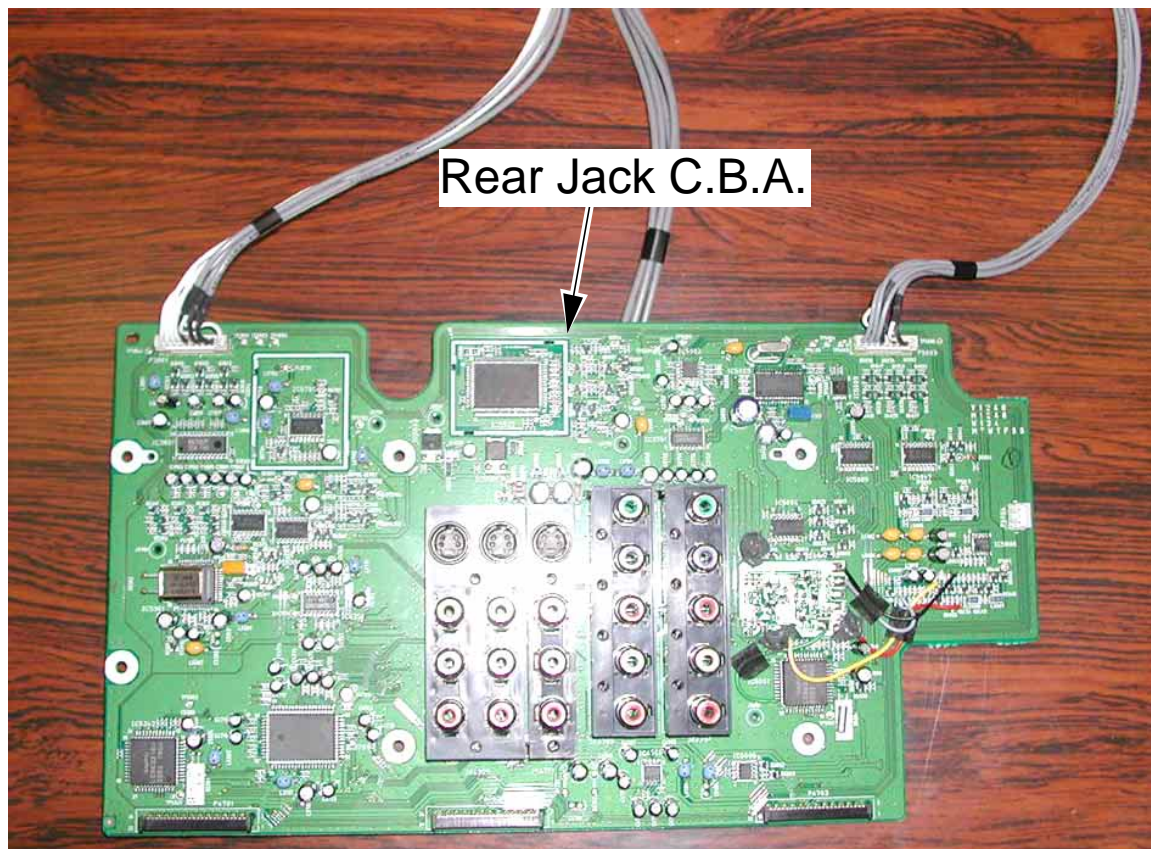
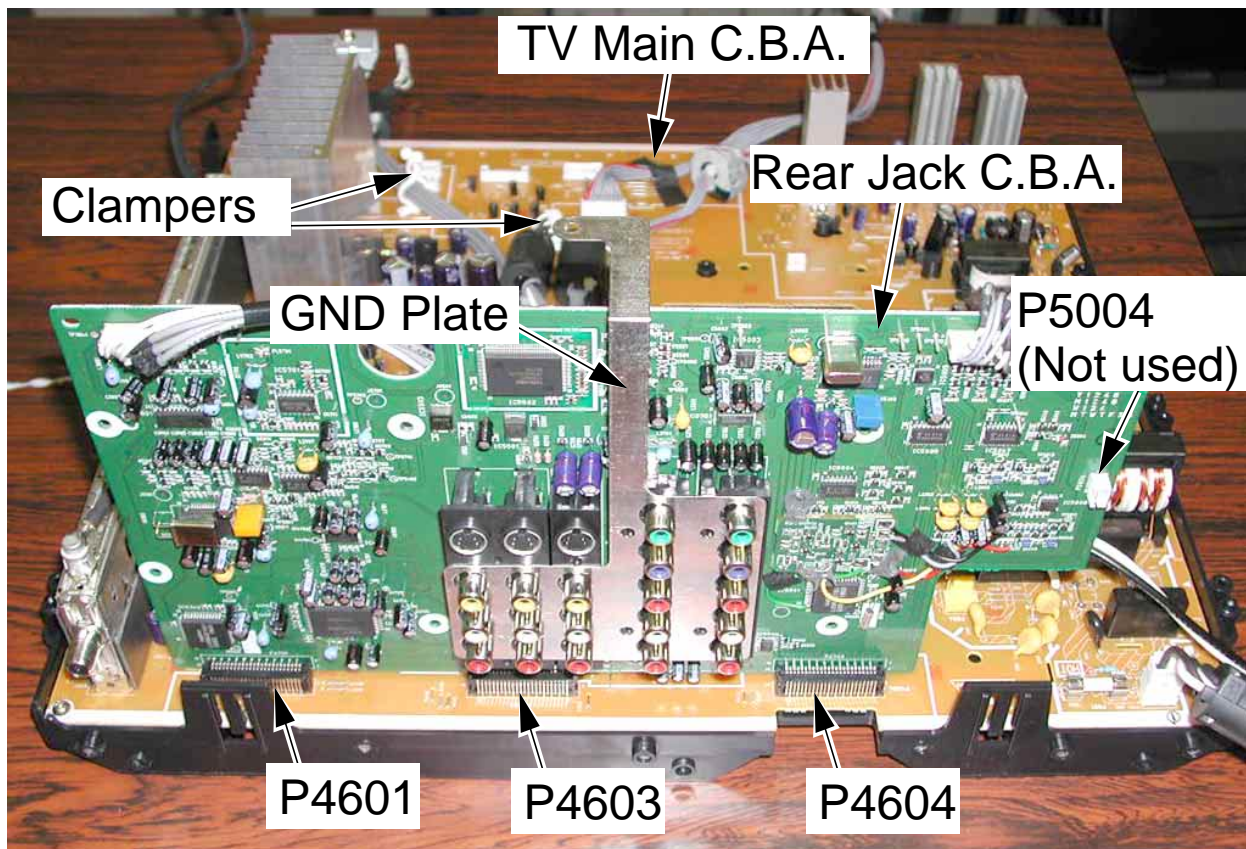


Fig. D1-14

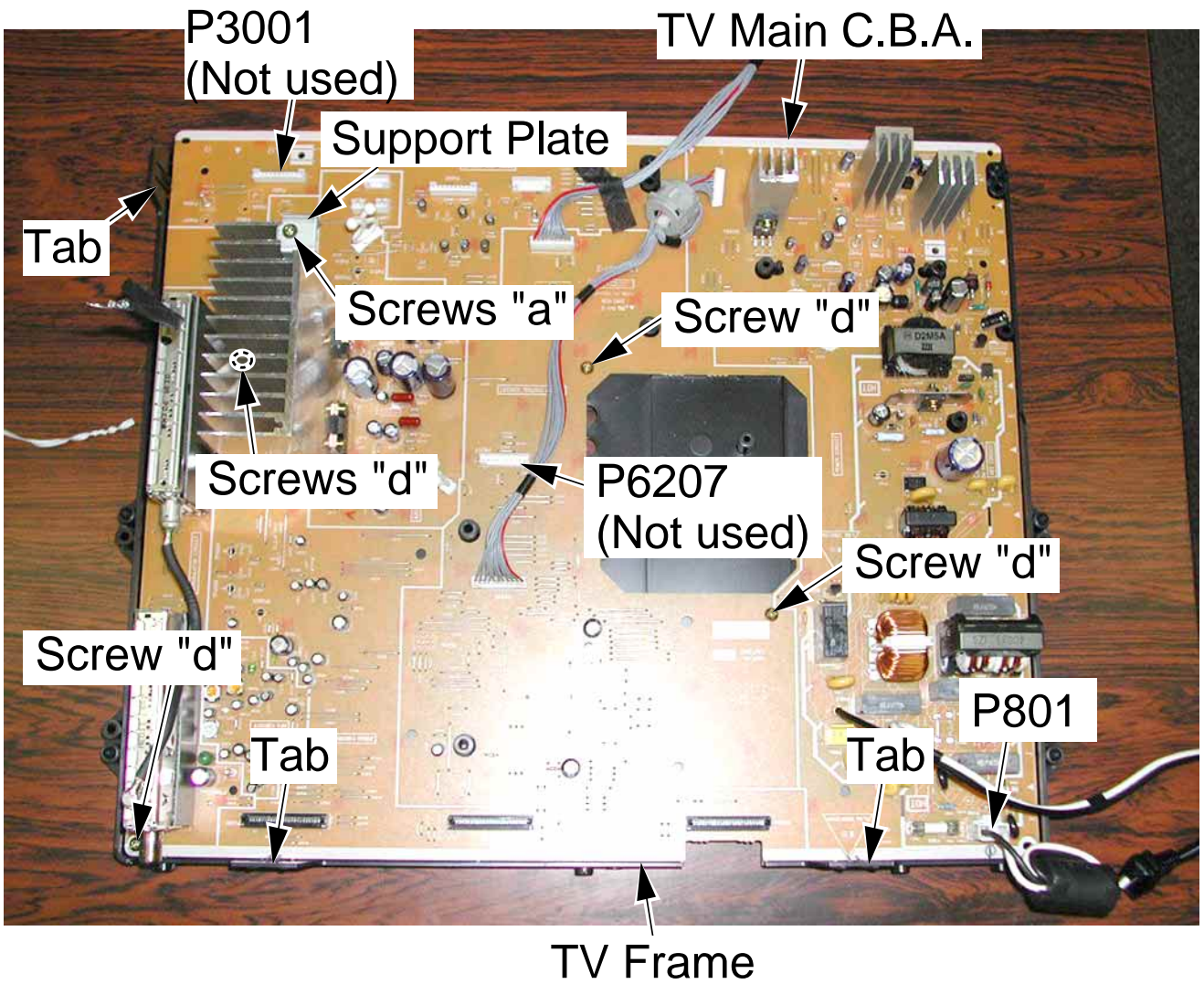


Fig. D1-15

TV Main C.B.A.

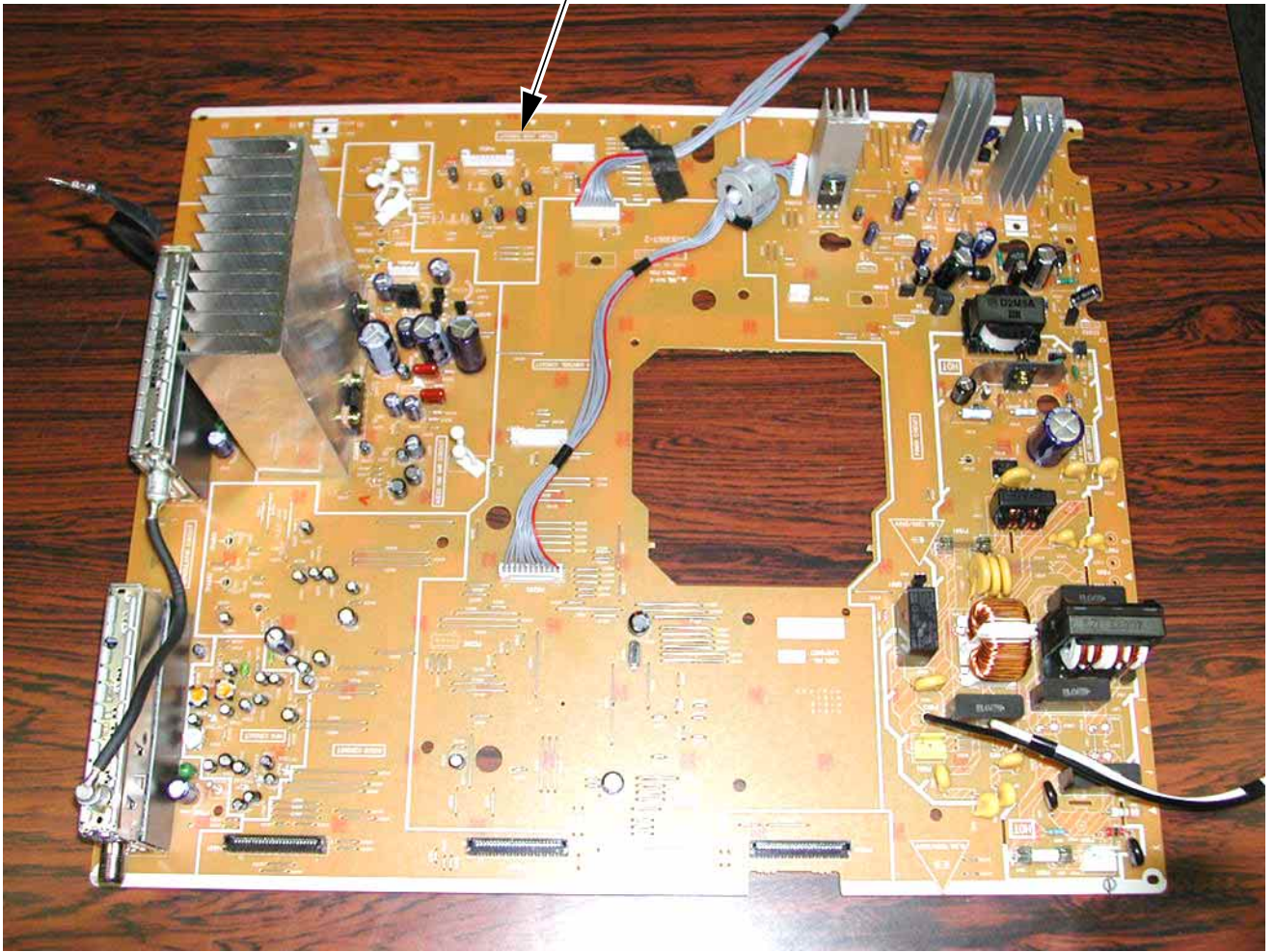
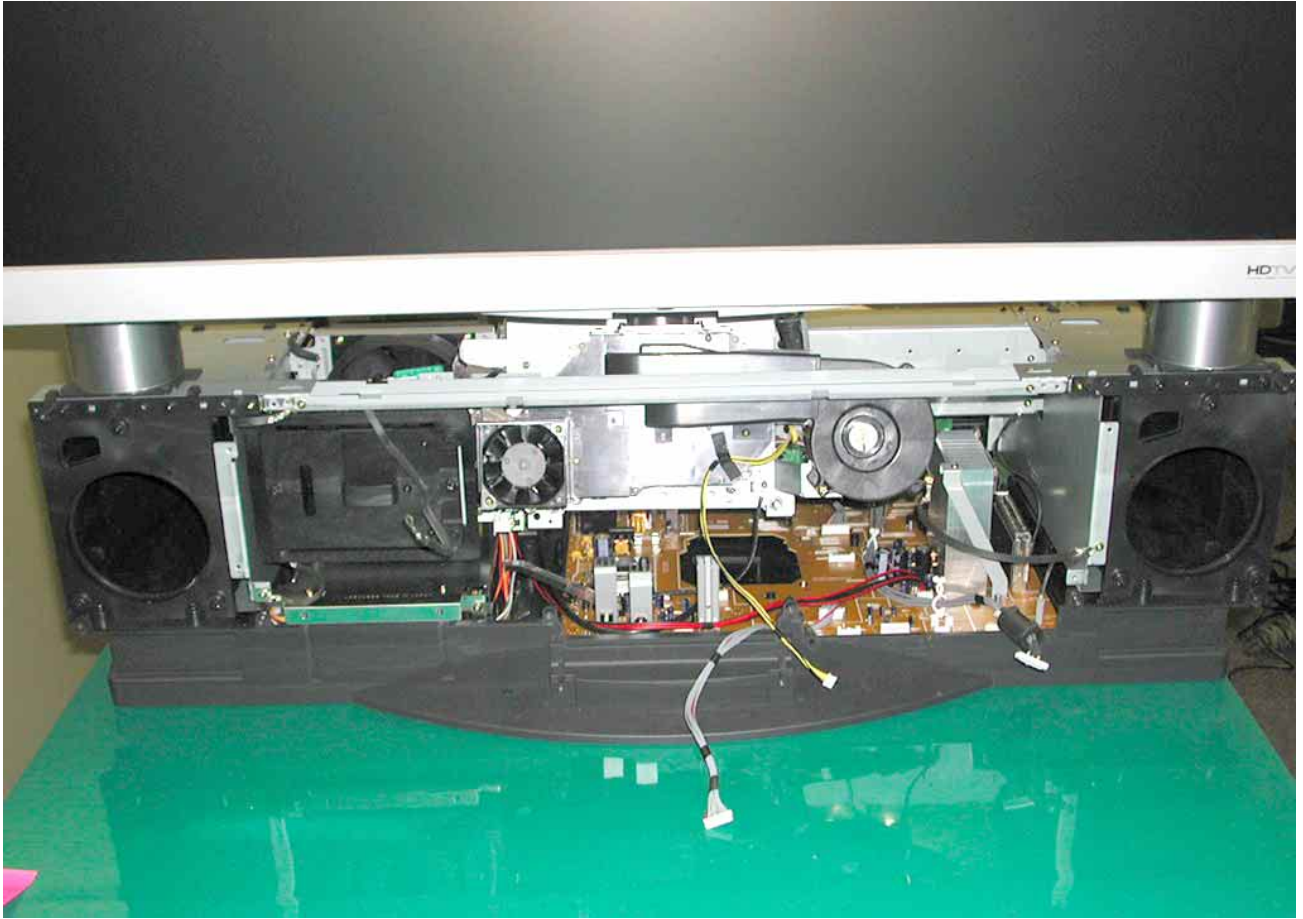


Fig. D1-16

After removing the Base Front Panel Unit



<Front View>

Fig. D2-1

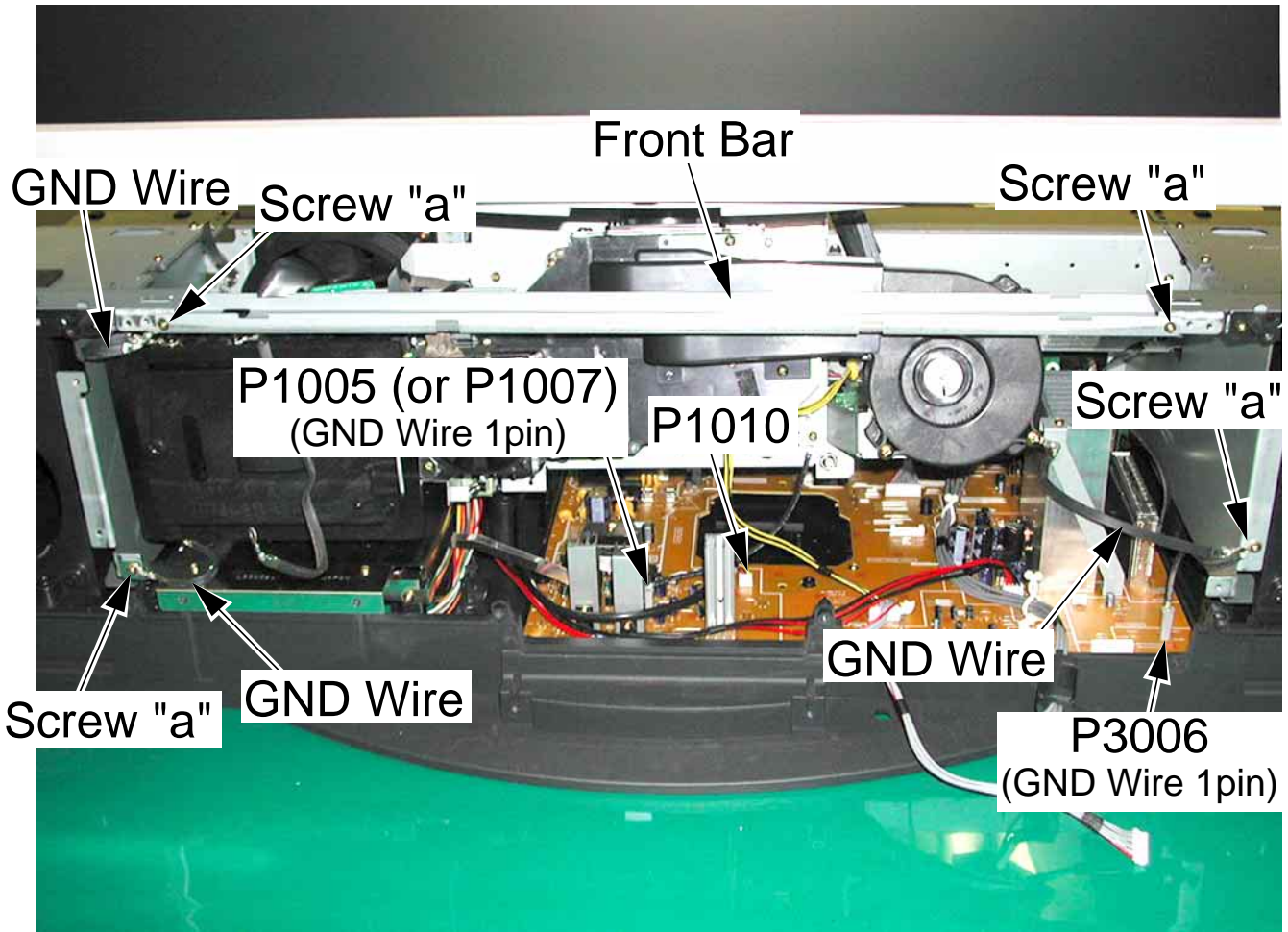


Fig. D2-2

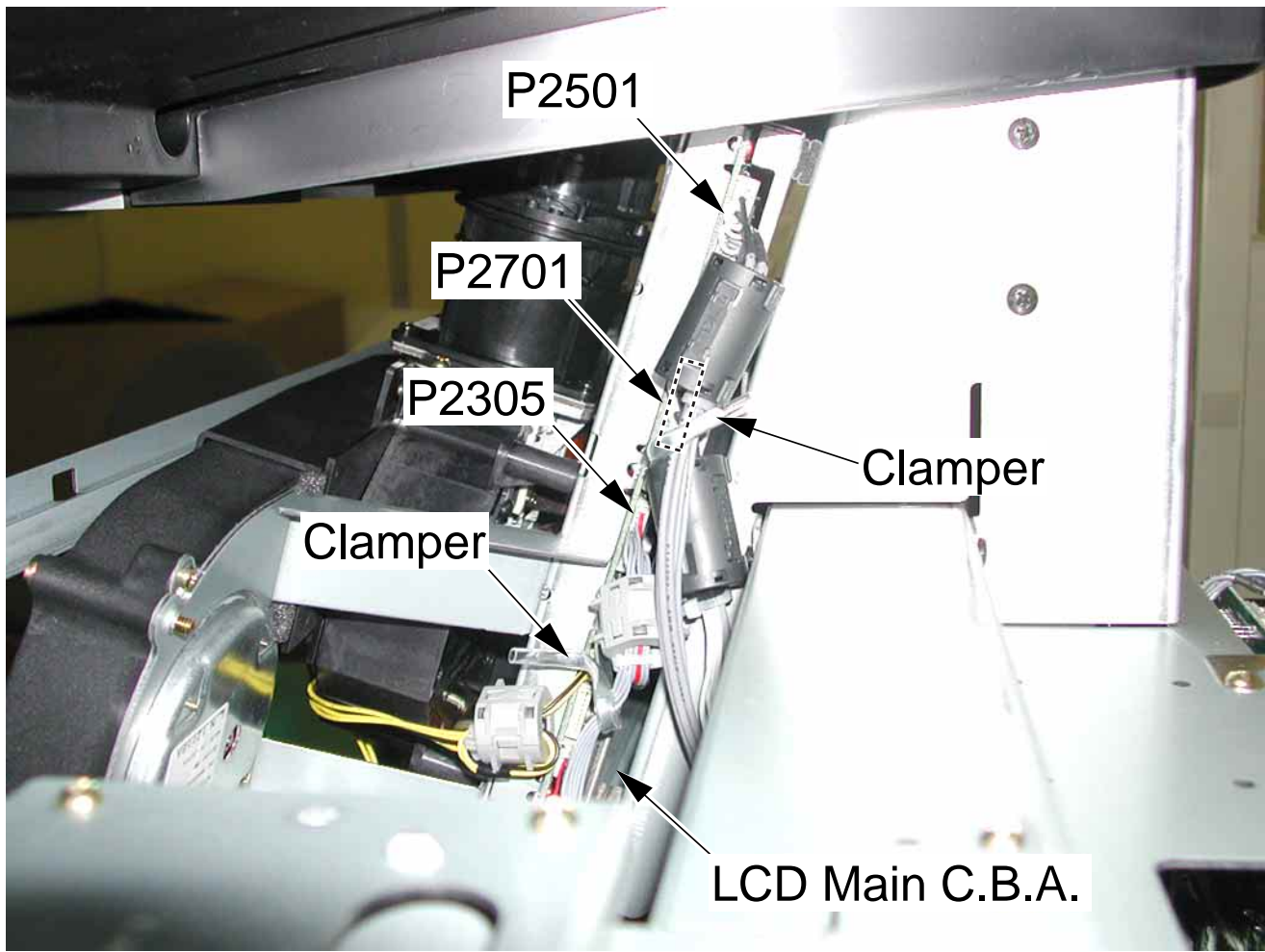


Fig. D2-3

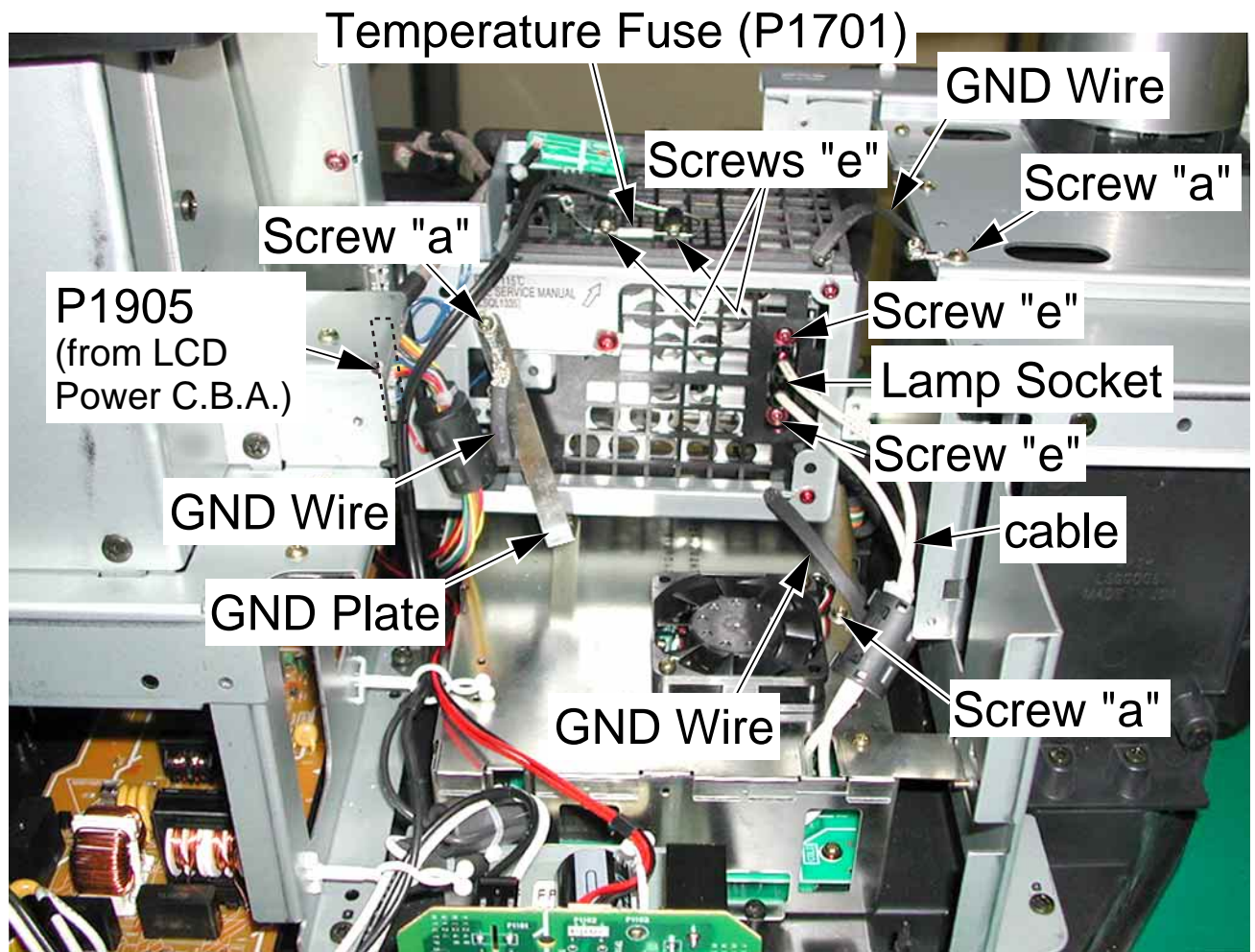
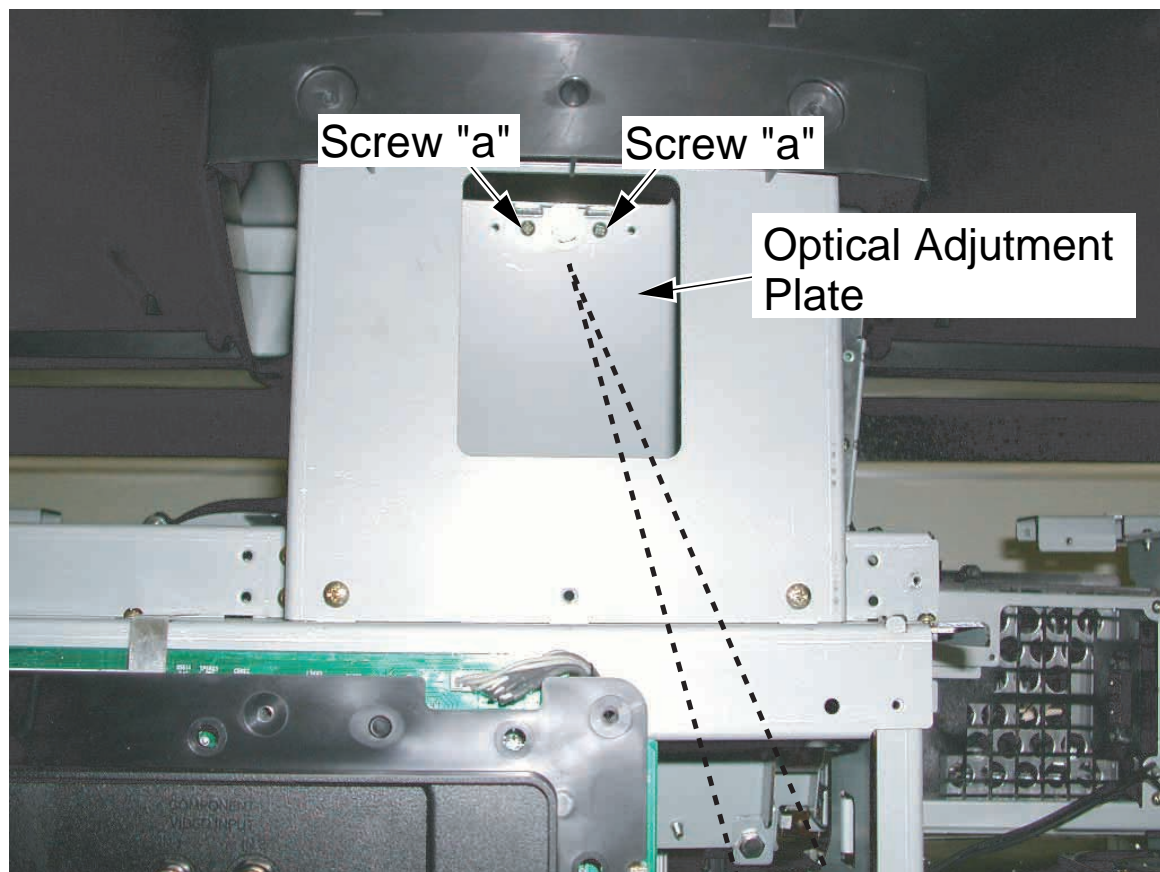


Fig. D2-5



<Rear View>

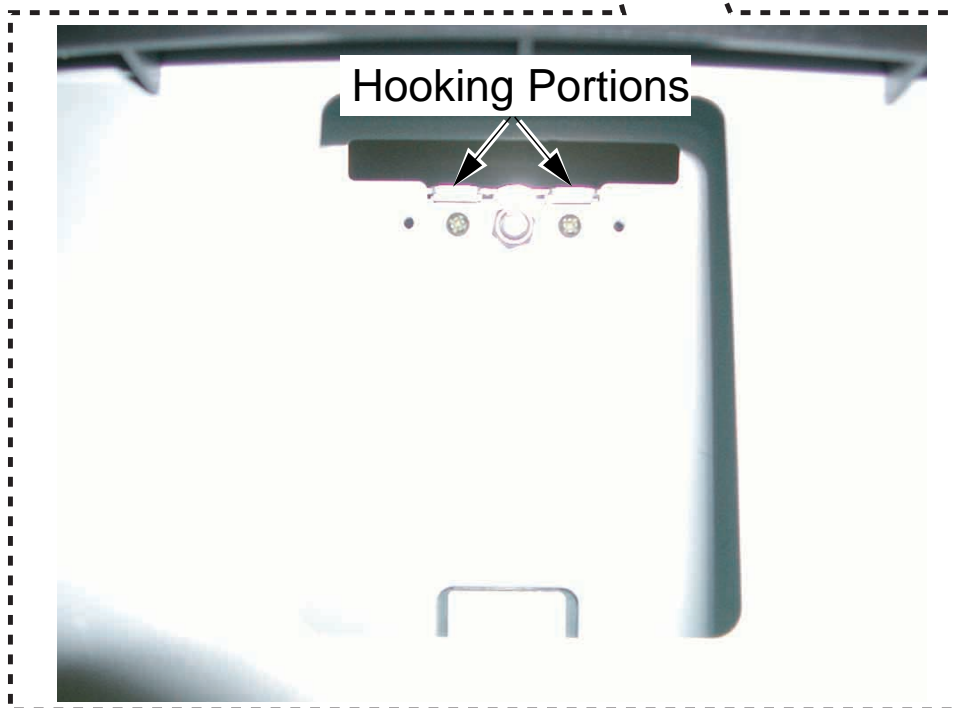
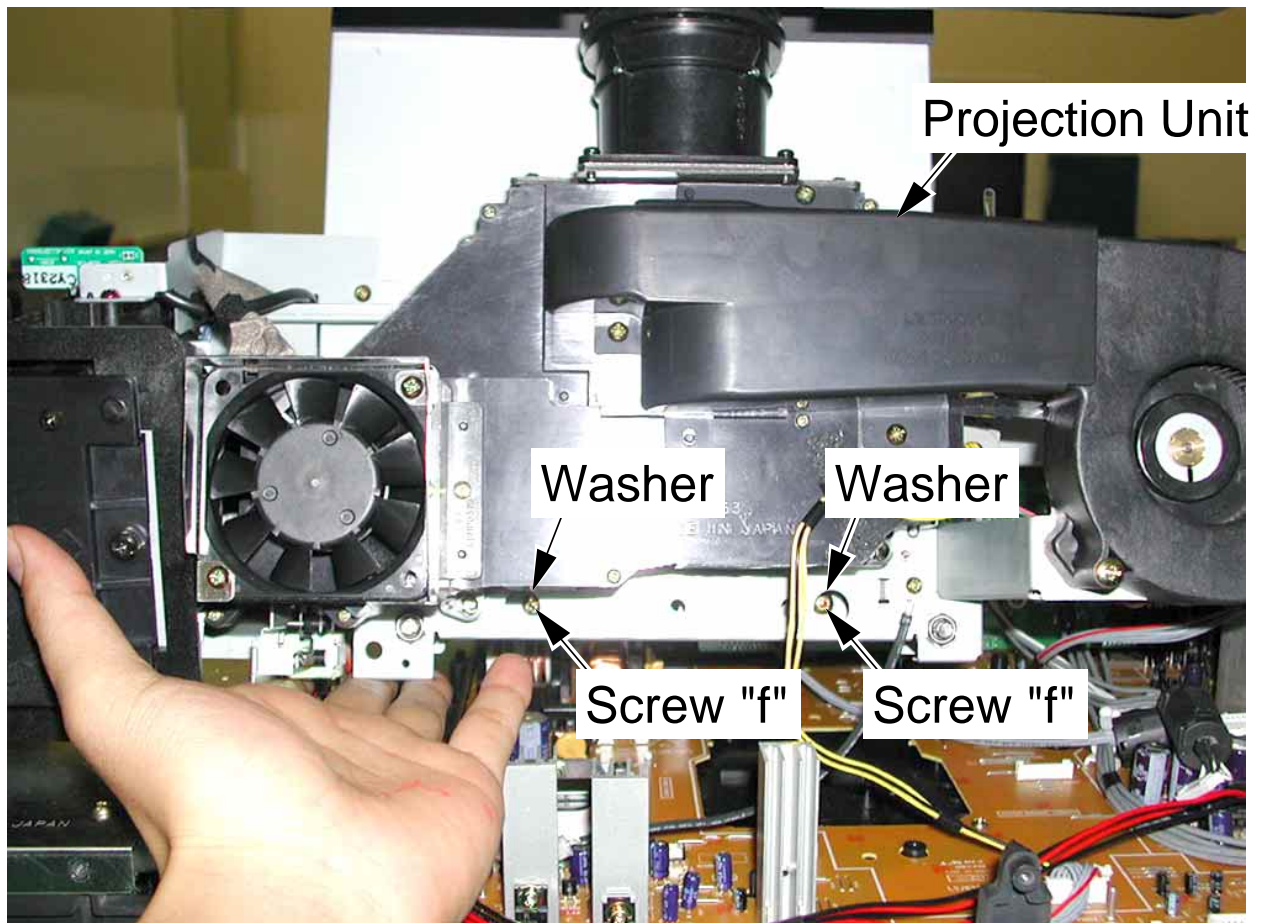
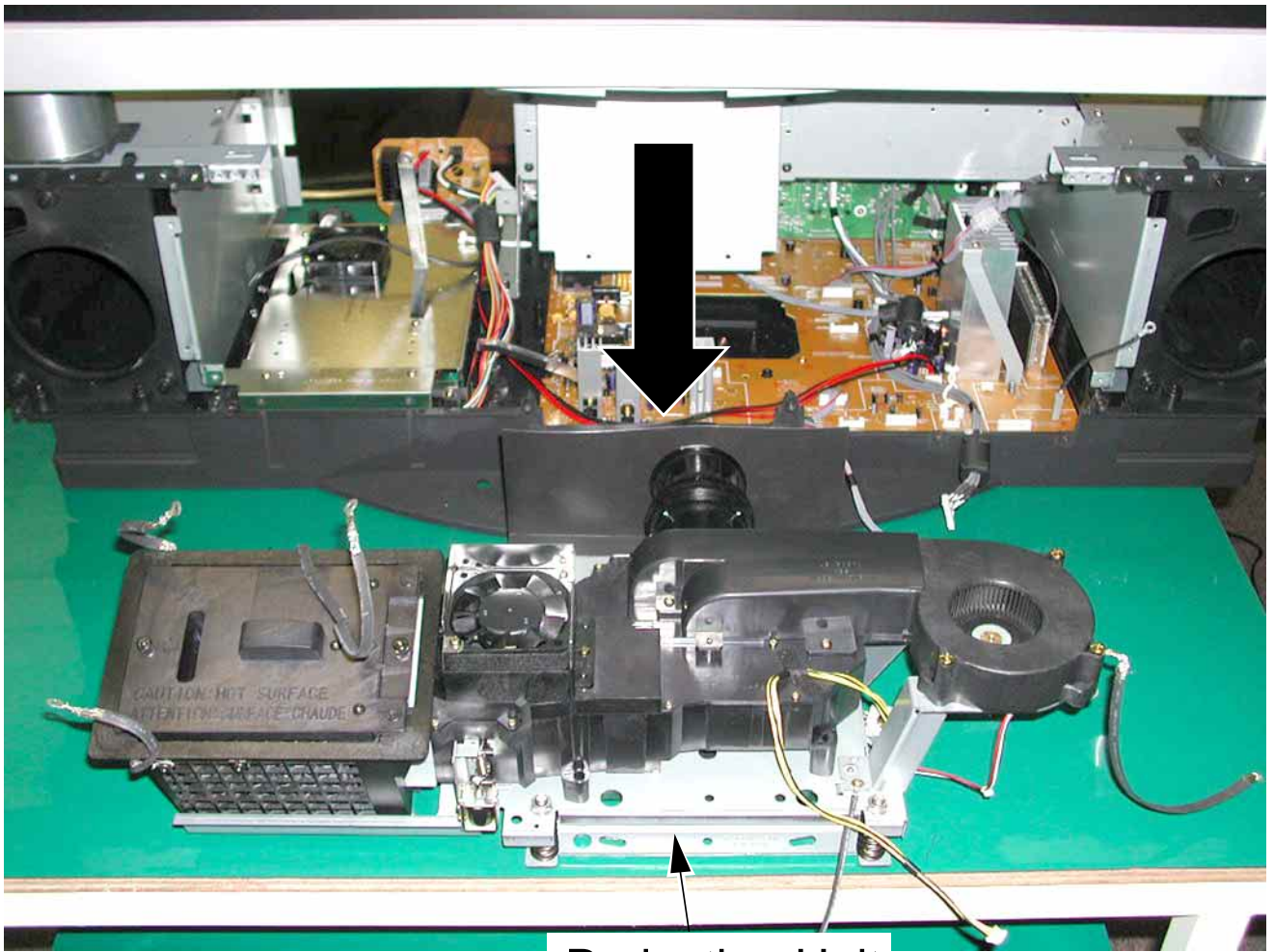


Fig. D2-6



<Front View>

Fig. D2-7



Projection Unit

Fig. D2-8

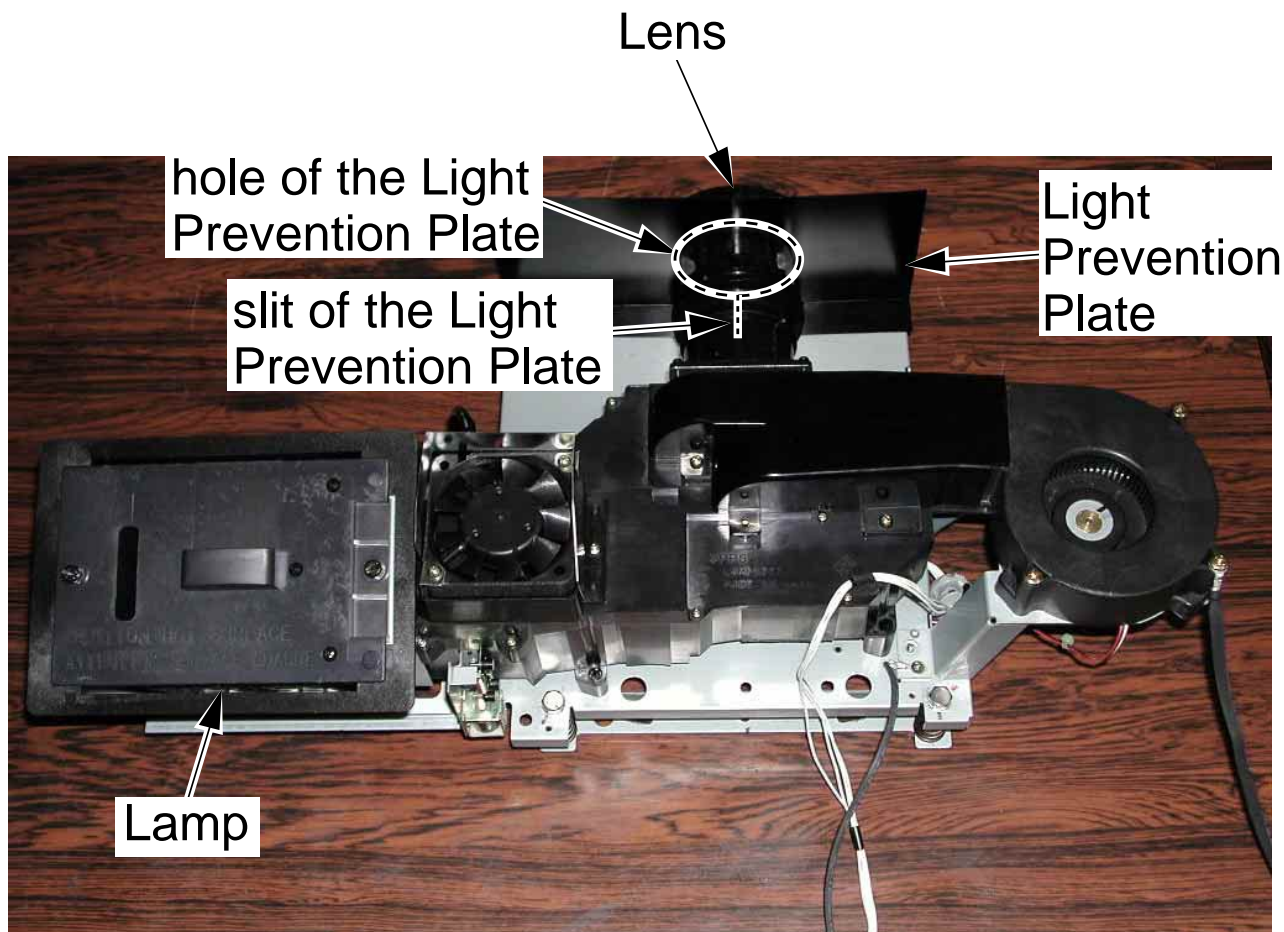


Fig. D2-9

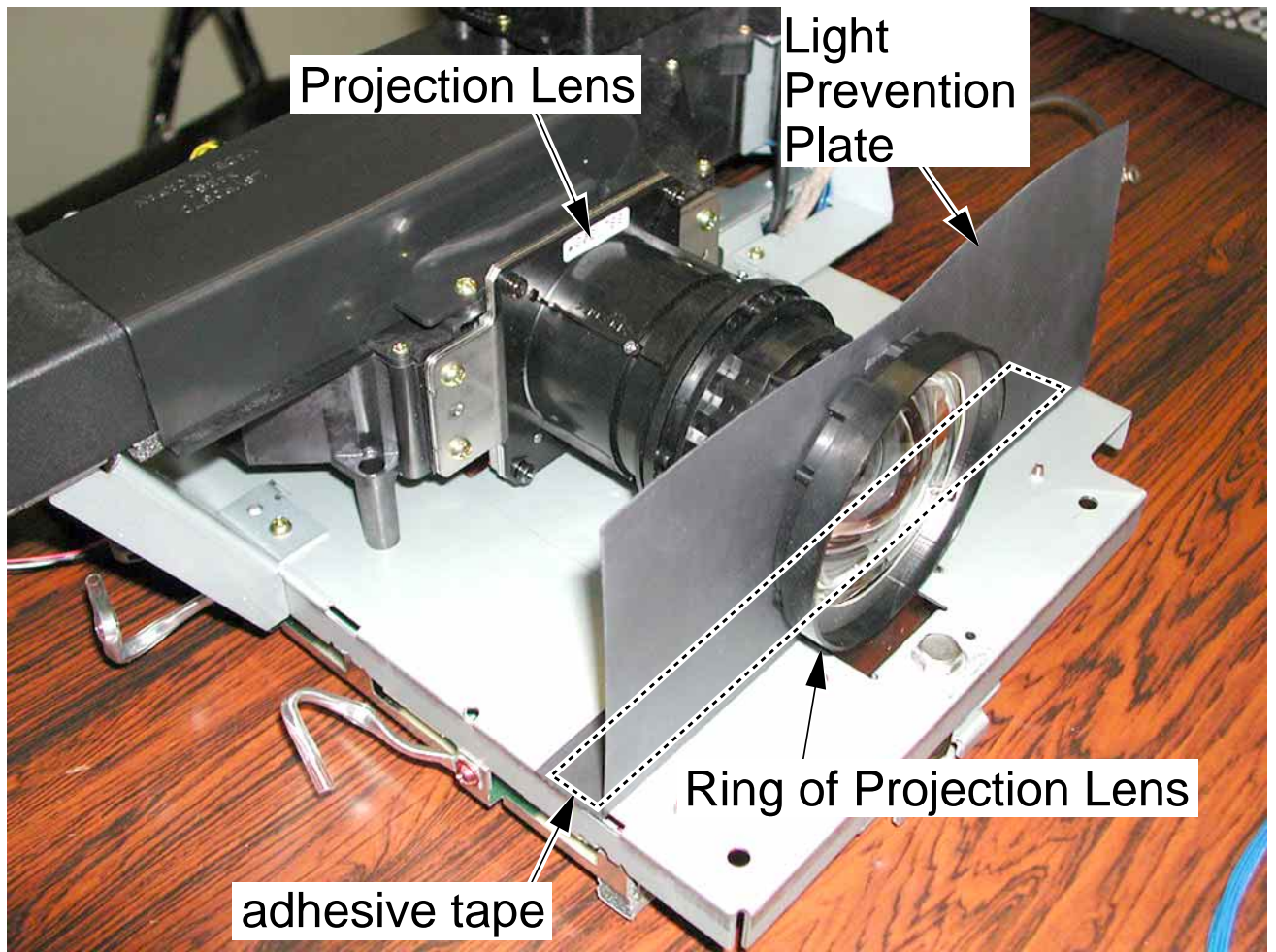
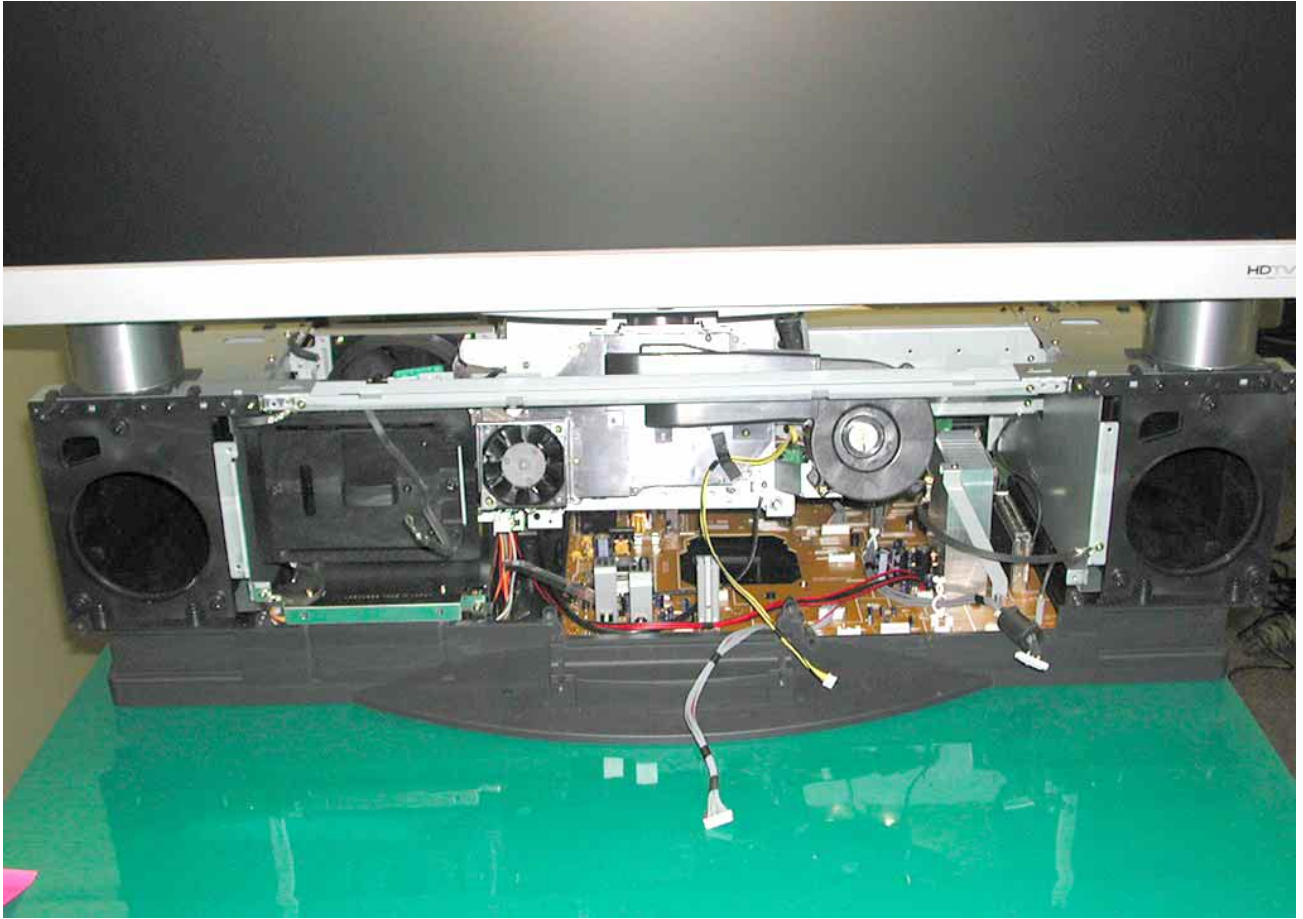


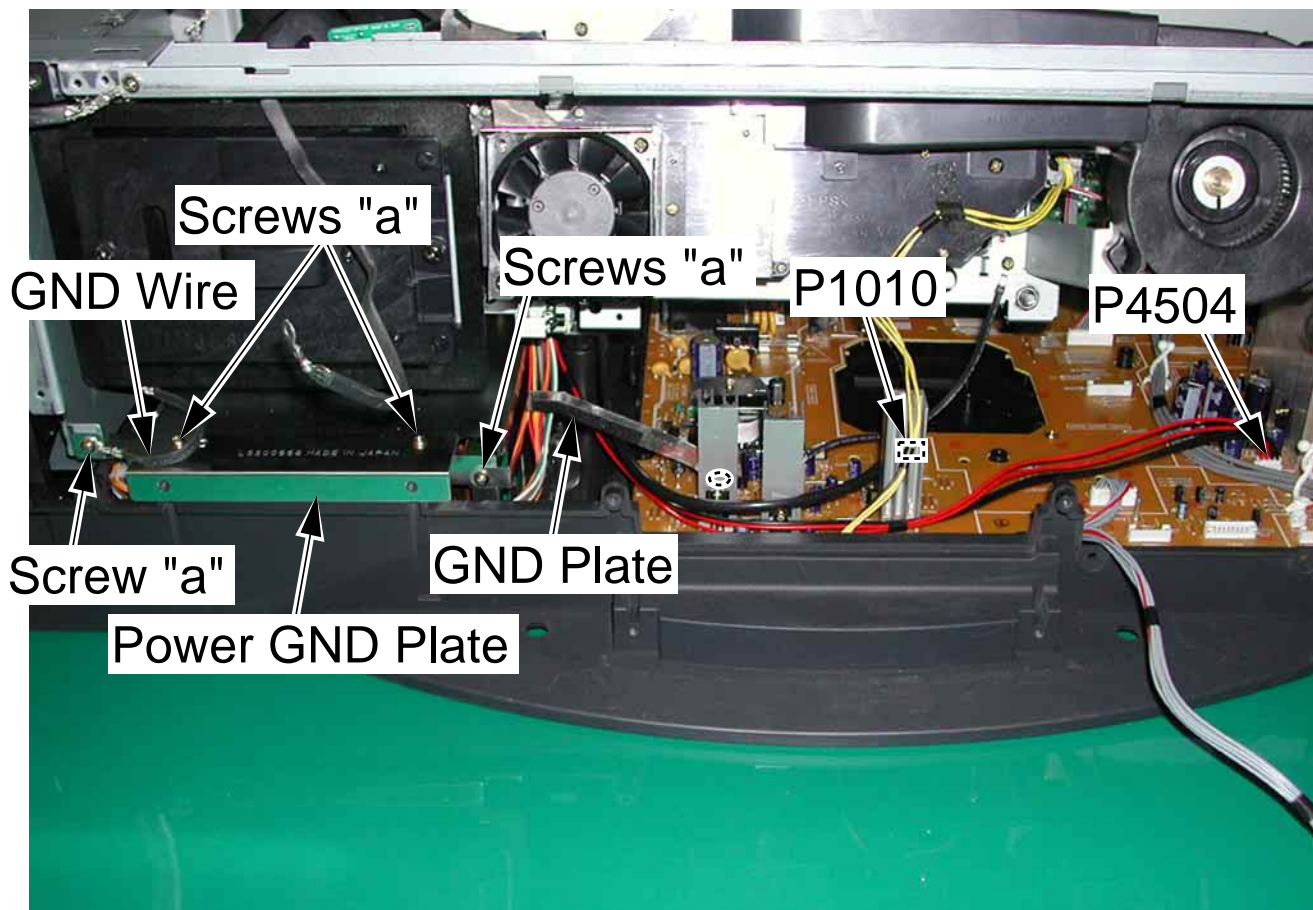
Fig. D2-10

After removing the Base Front Panel Unit



<Front View>

Fig. D3-1



<Front View>

Fig. D3-2

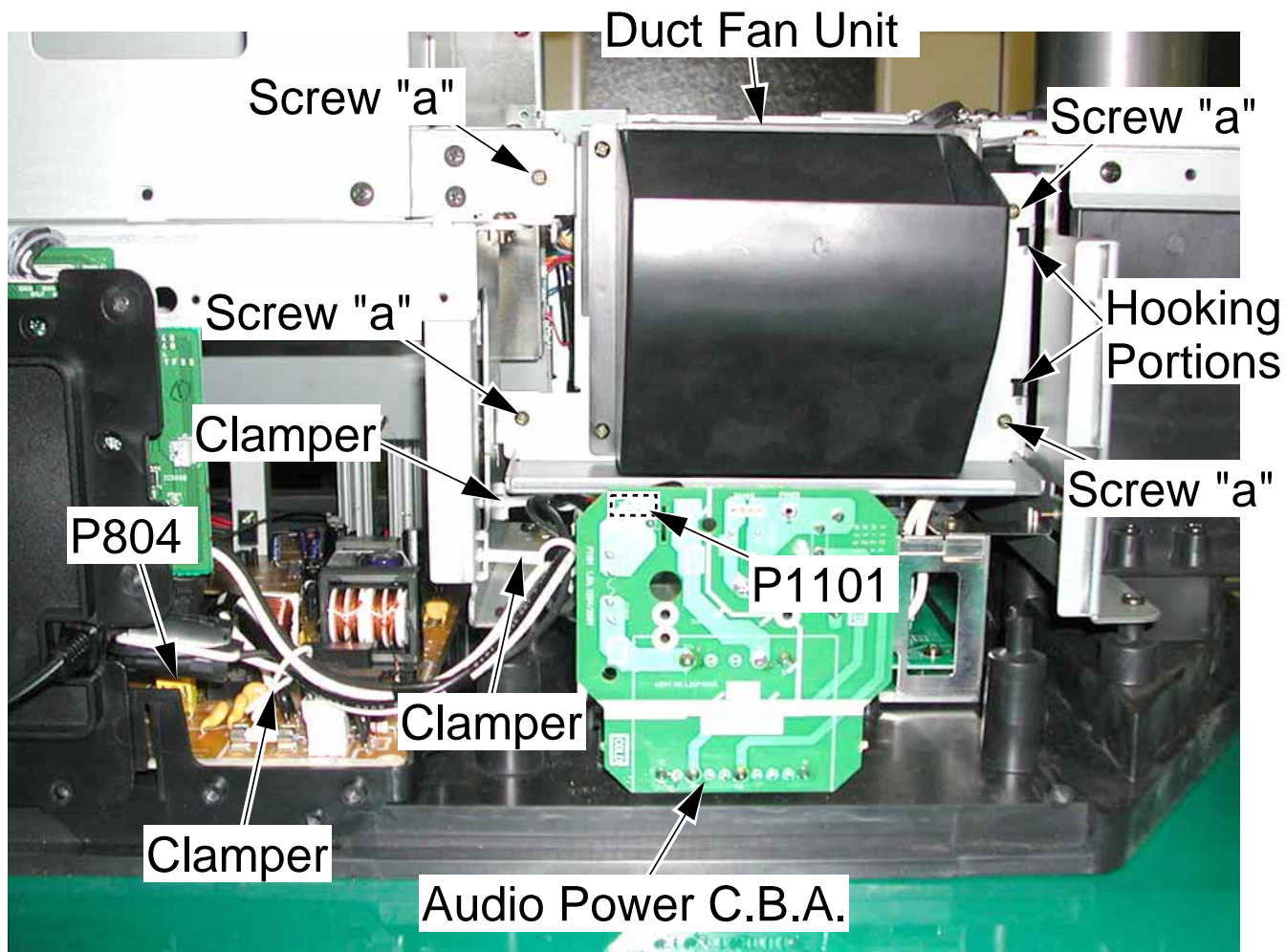
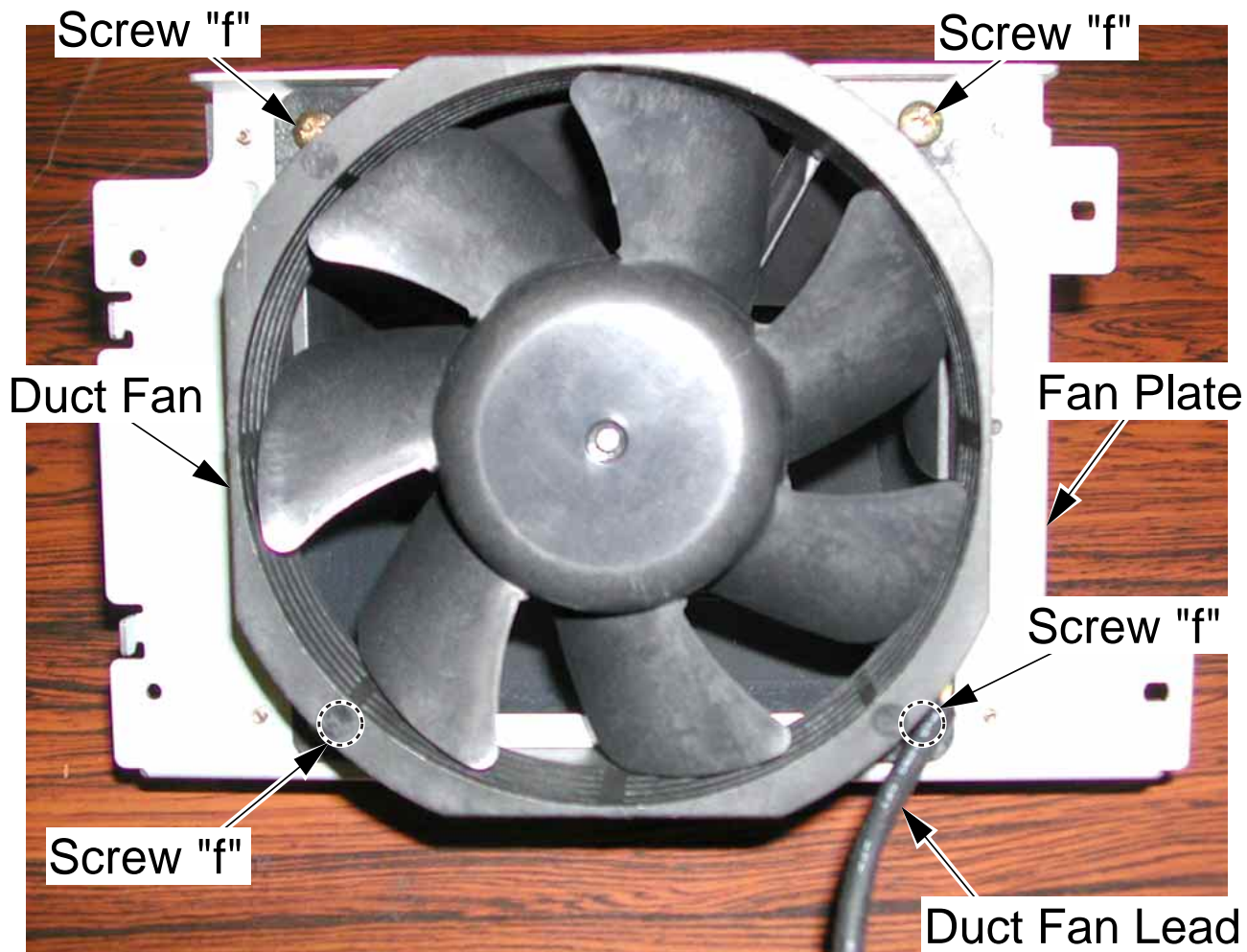


Fig. D3-3-1



<Front View>

Fig. D3-3-2

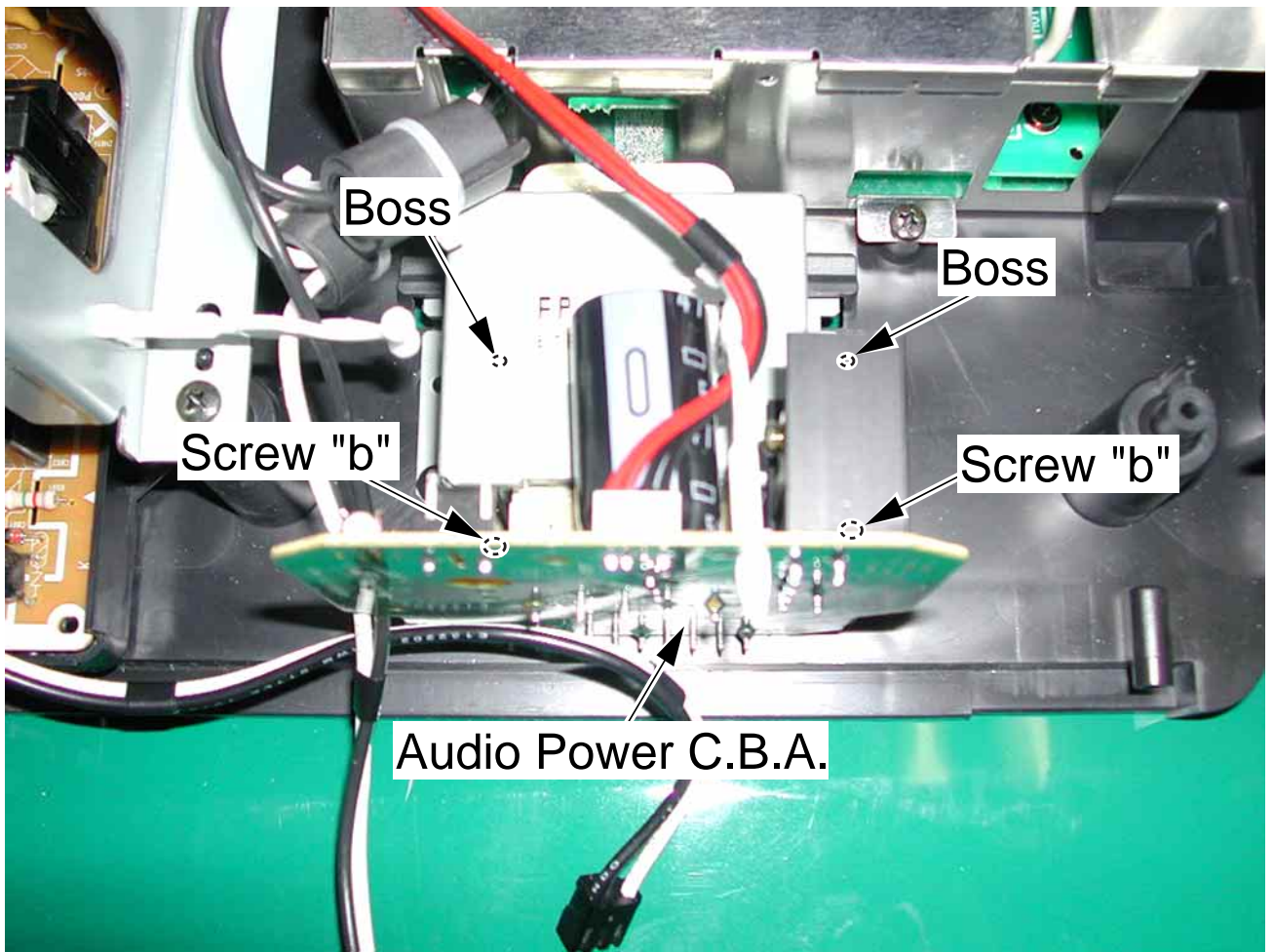


Fig. D3-4

Temperature Fuse (P1701)

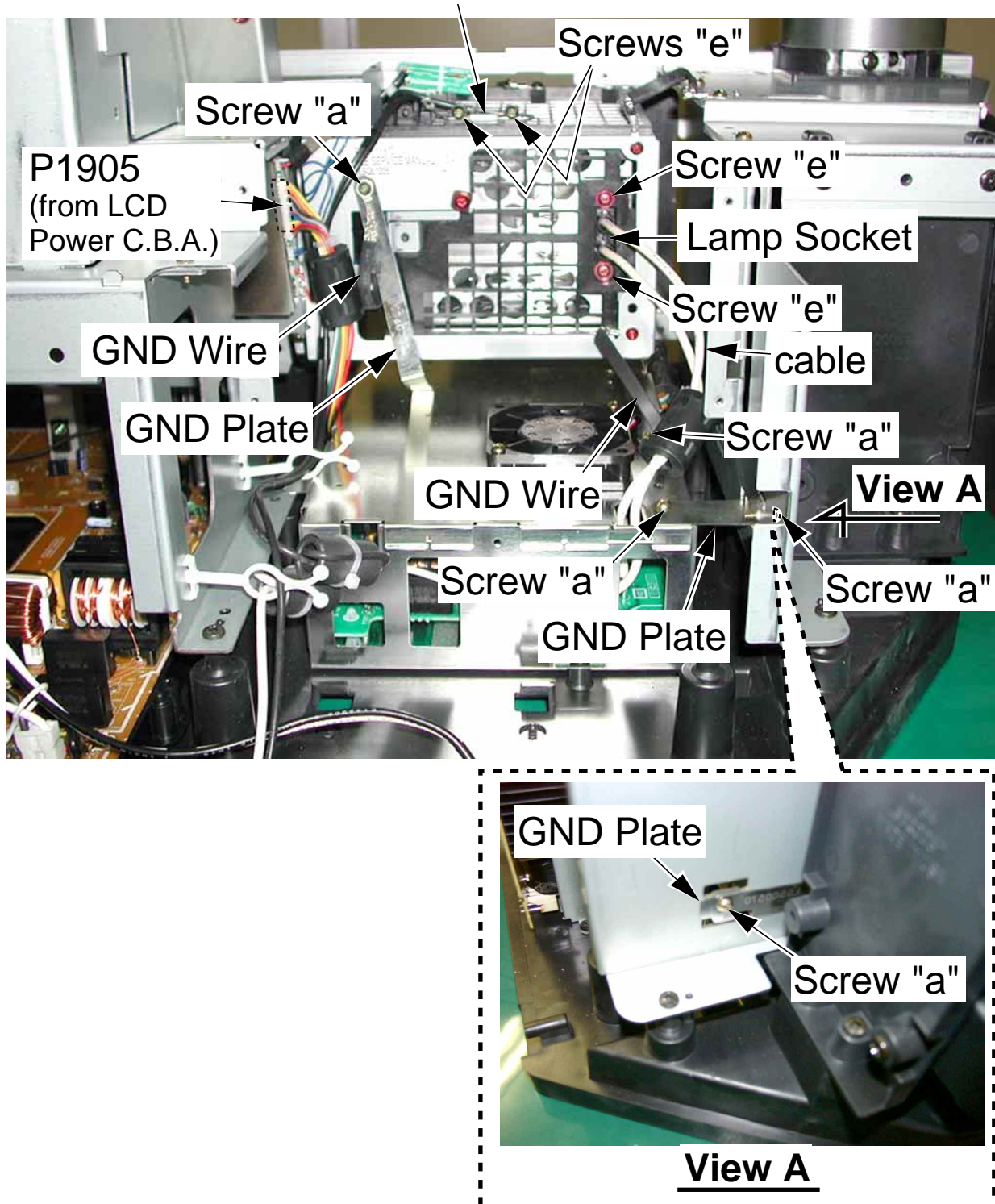
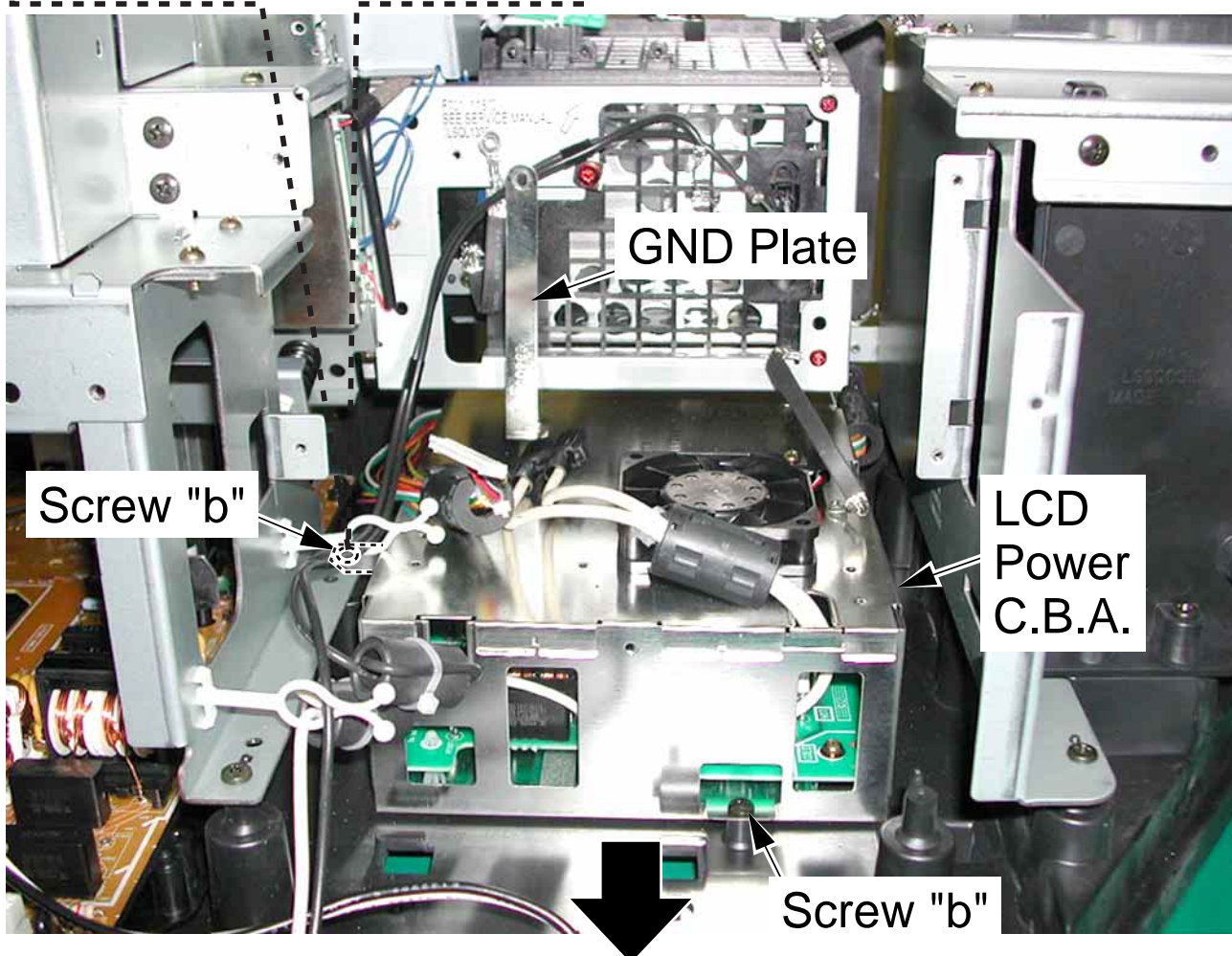
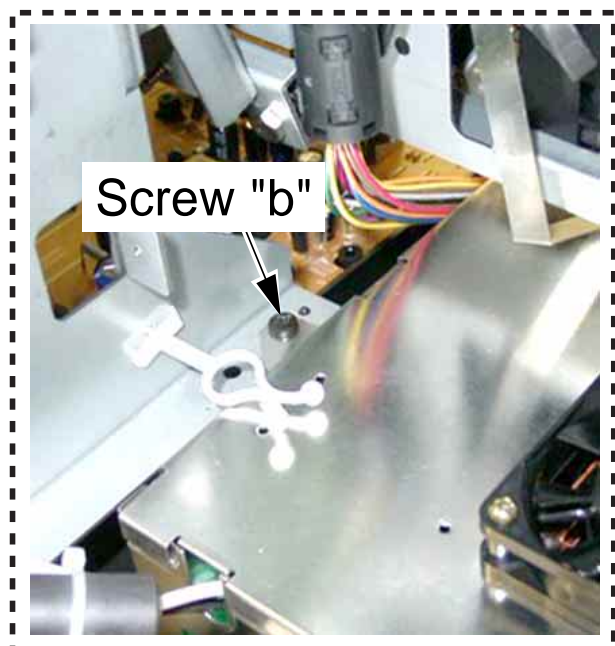
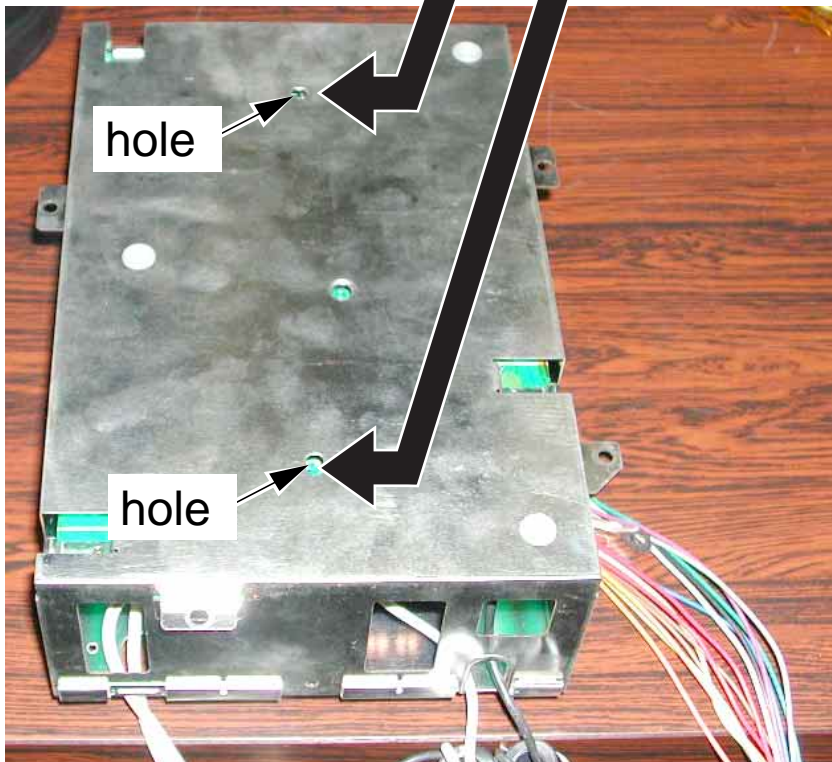
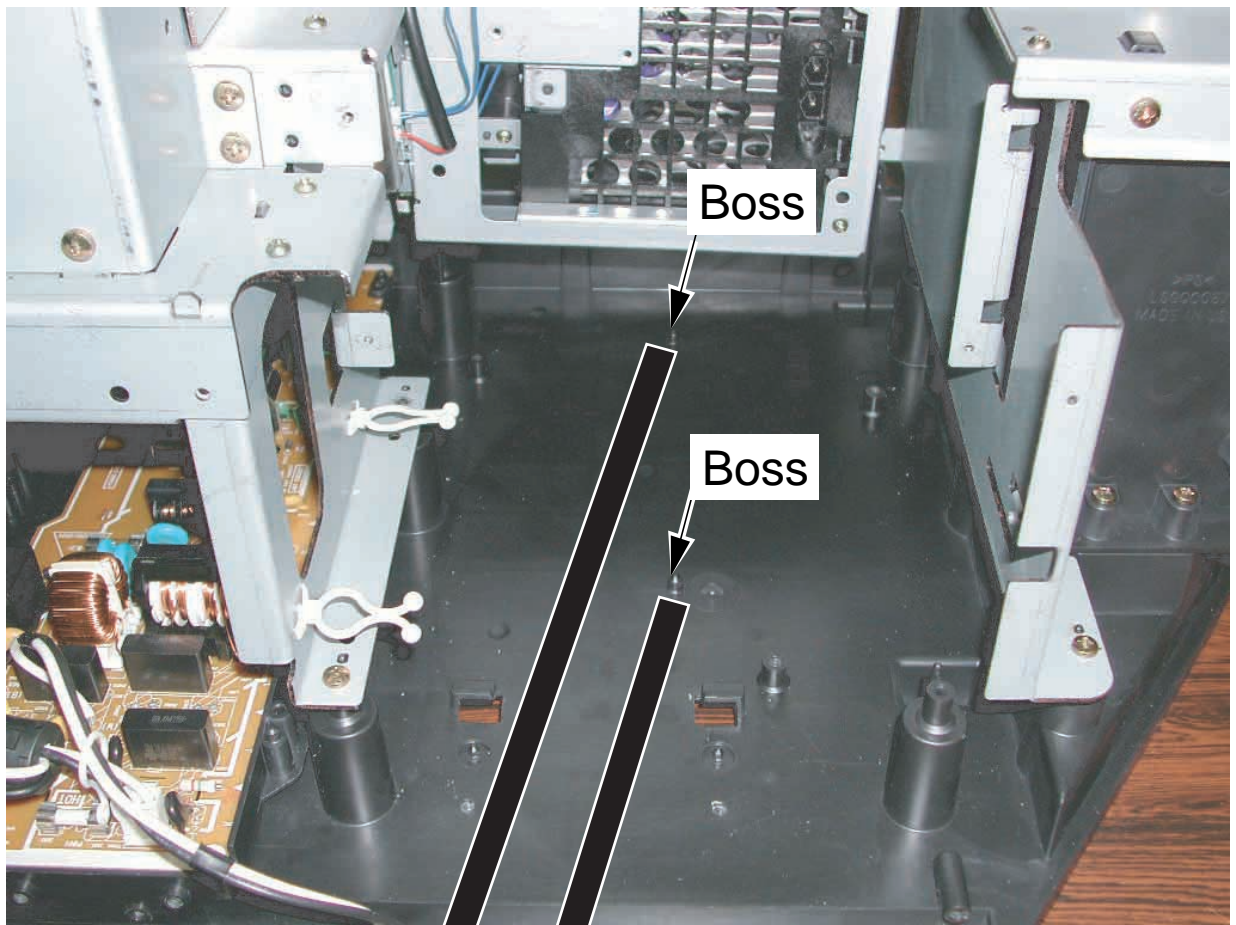


Fig. D3-5



Lift up and slide

Fig. D3-6-1



<Bottom View of LCD Power C.B.A.>

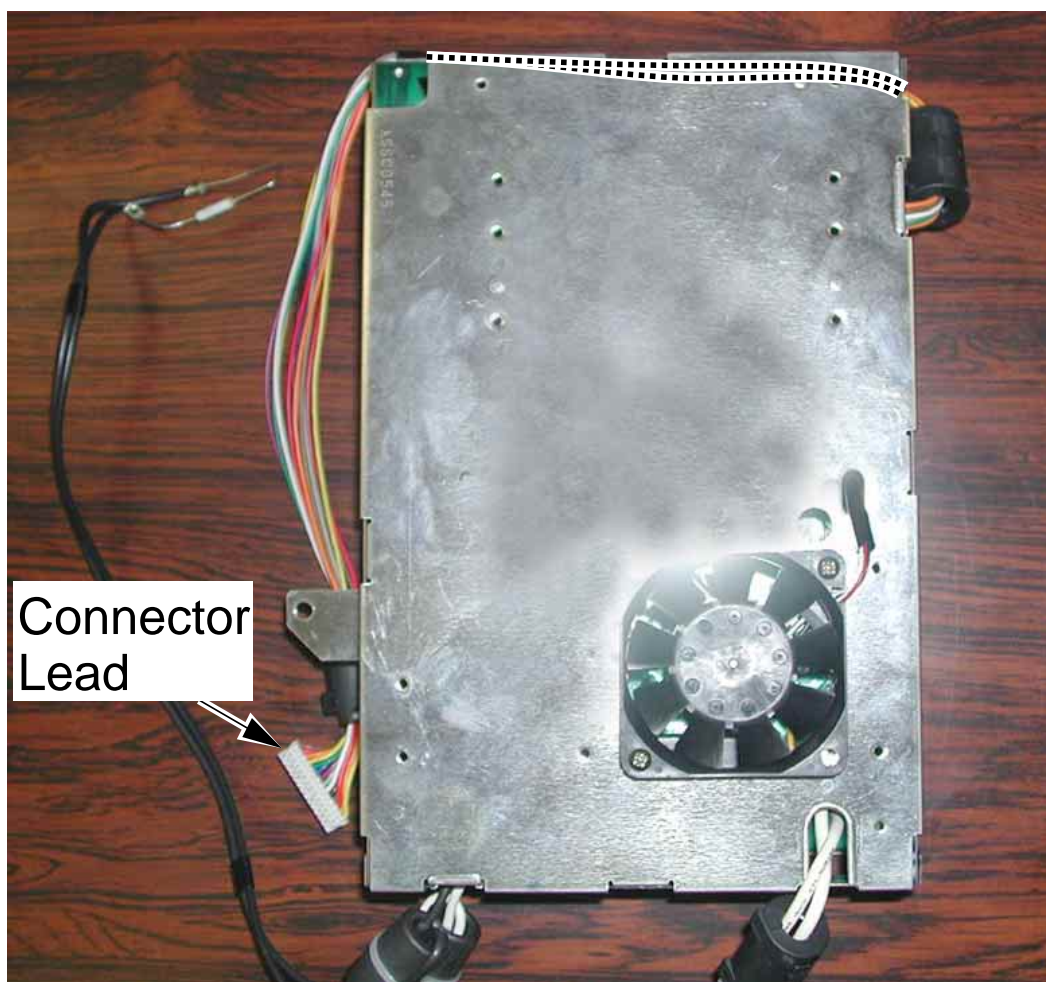


Fig. D3-6-2

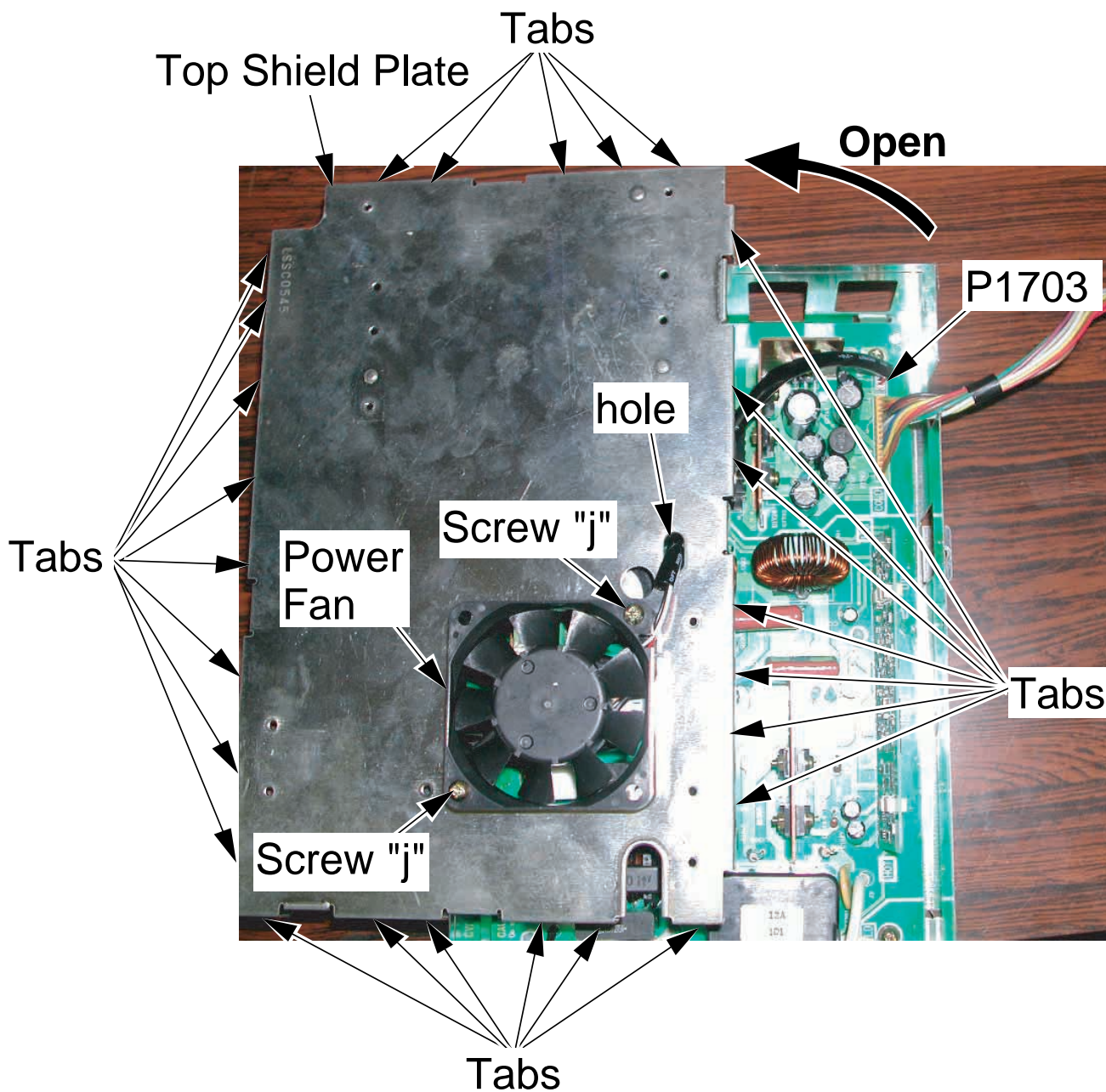
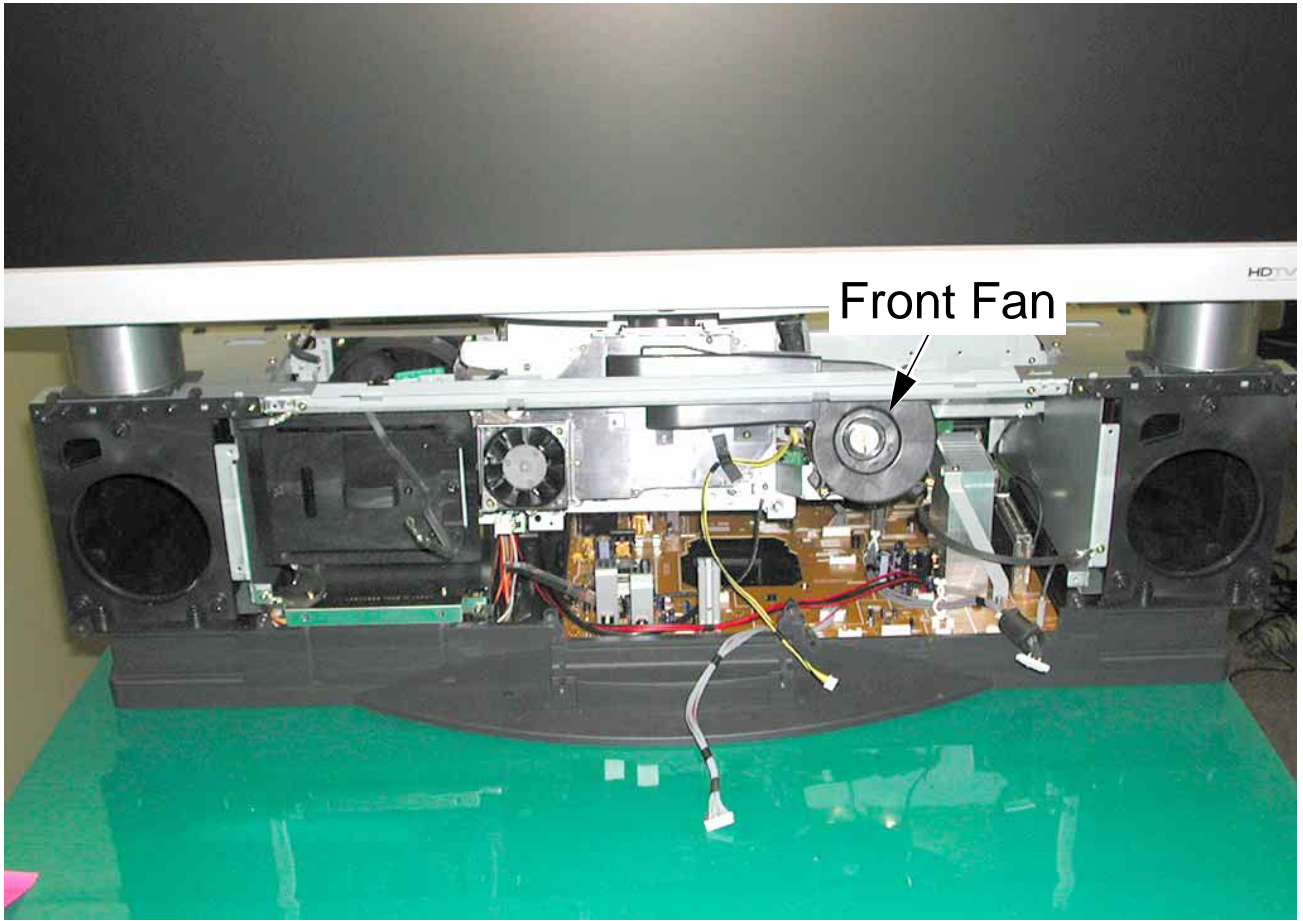


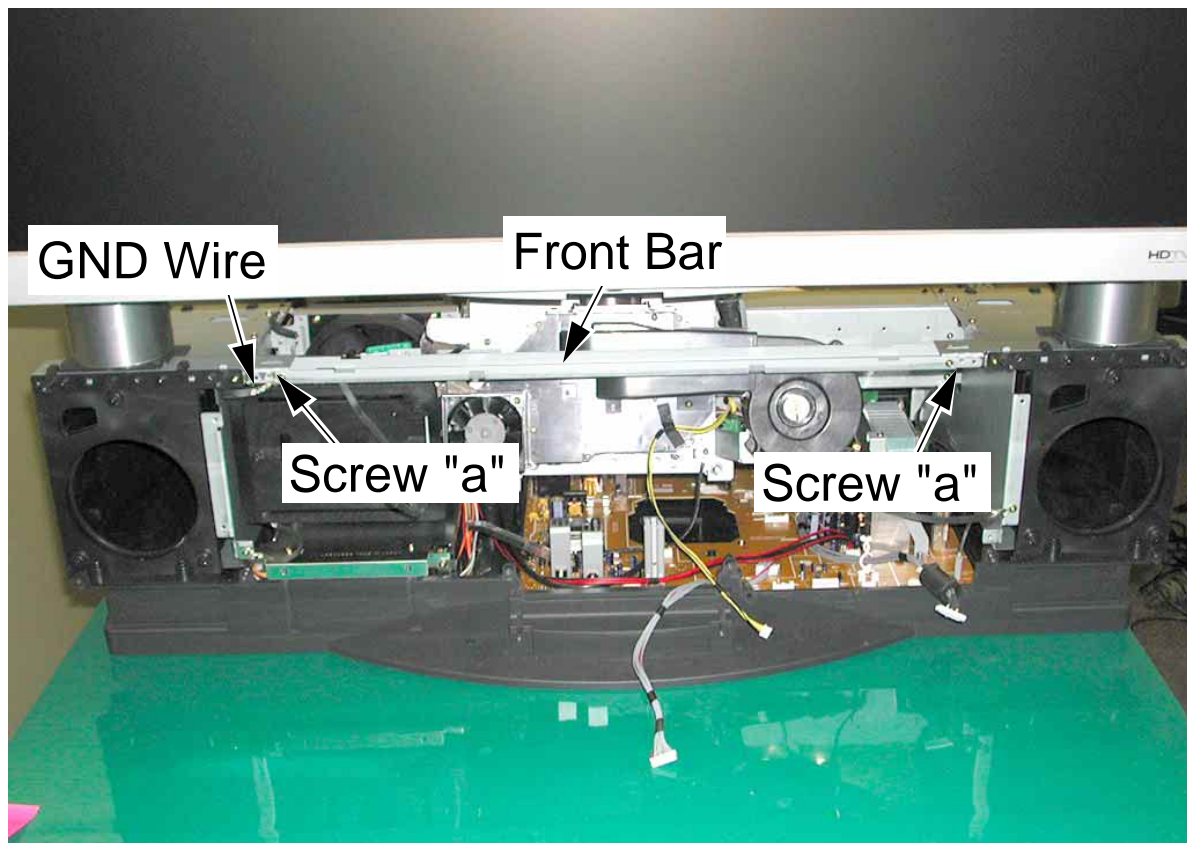
Fig. D3-7

After removing the Base Front Panel Unit



<Front View>

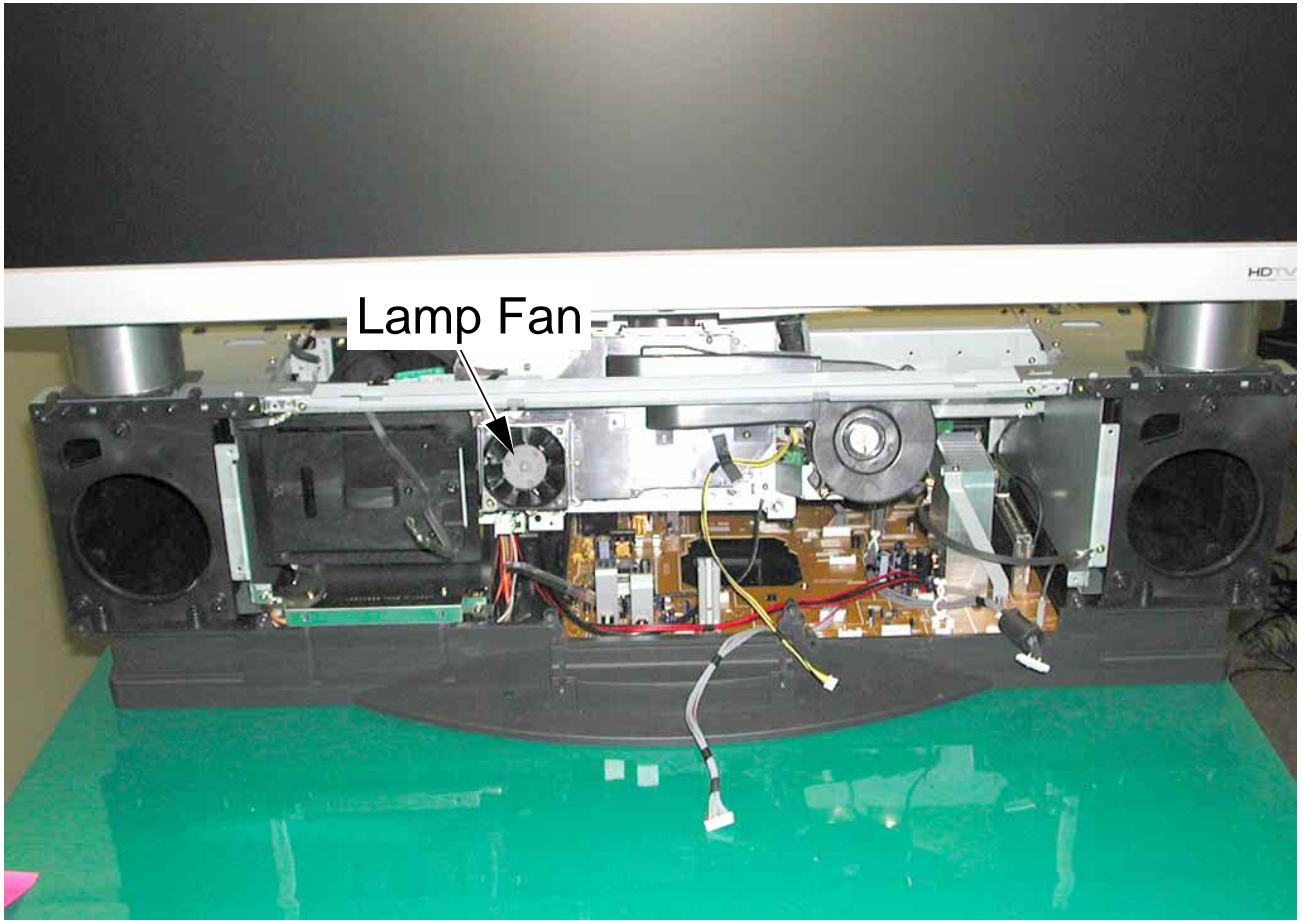
Fig. D4-1-1



<Front View>

Fig. D4-1-2

After removing the Base Front Panel Unit



<Front View>

Fig. D4-2-1

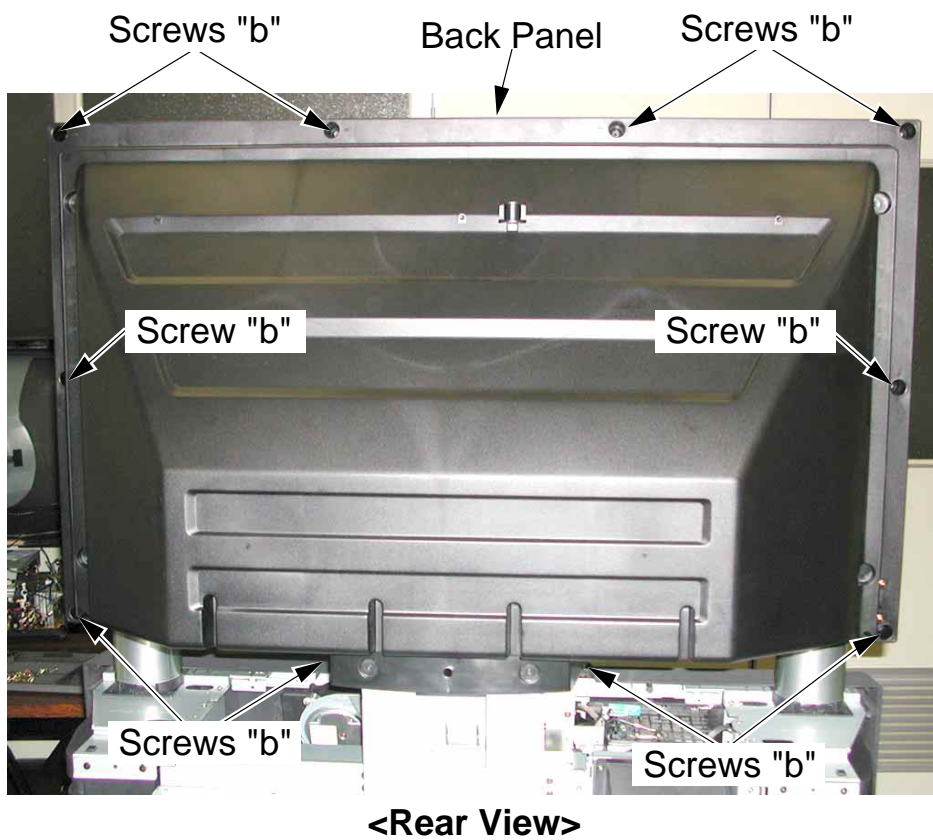
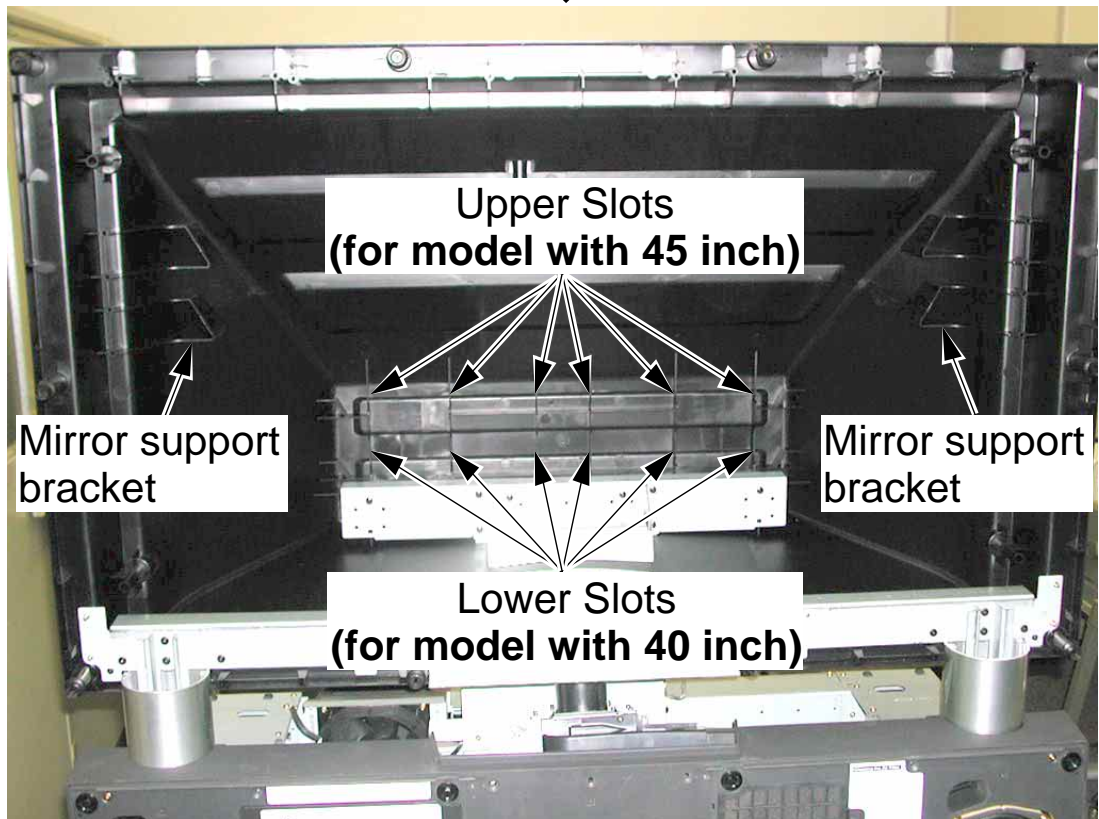
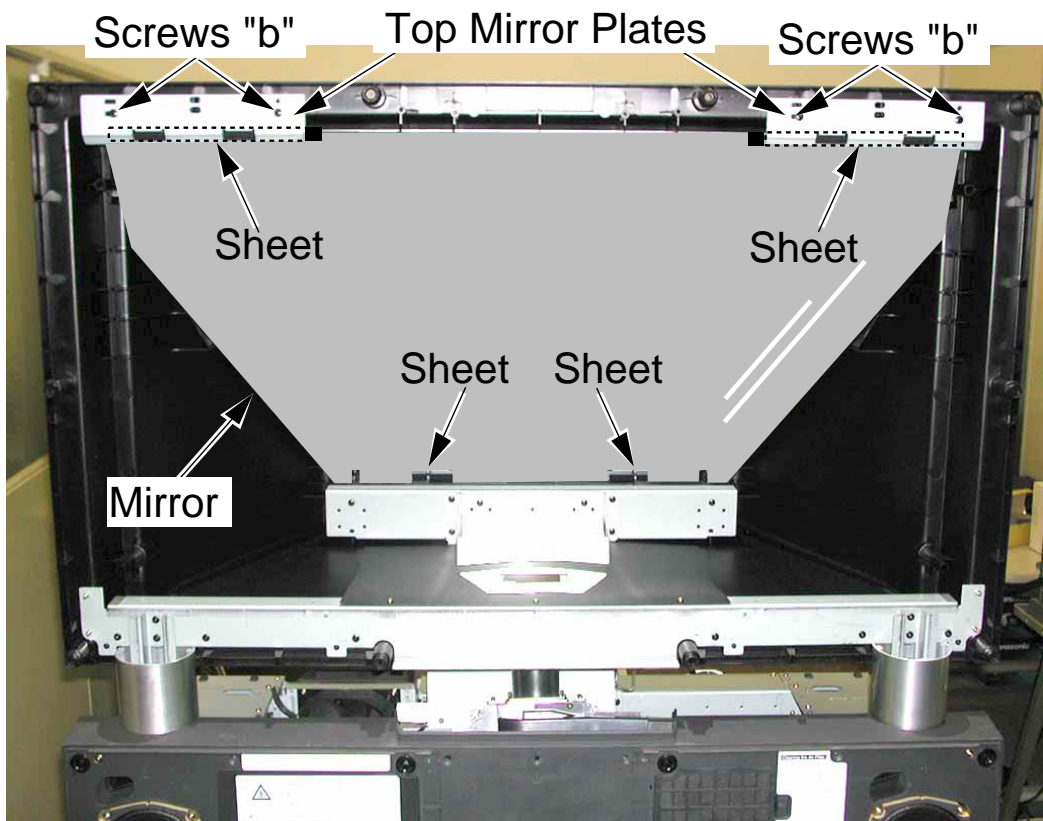


Fig. D5-1



<Front View>

Fig. D5-2

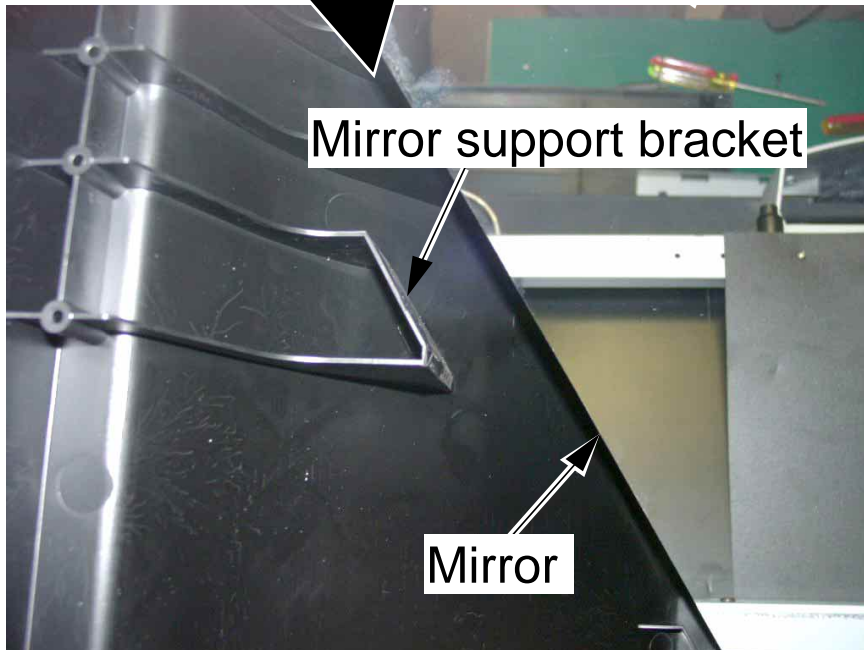
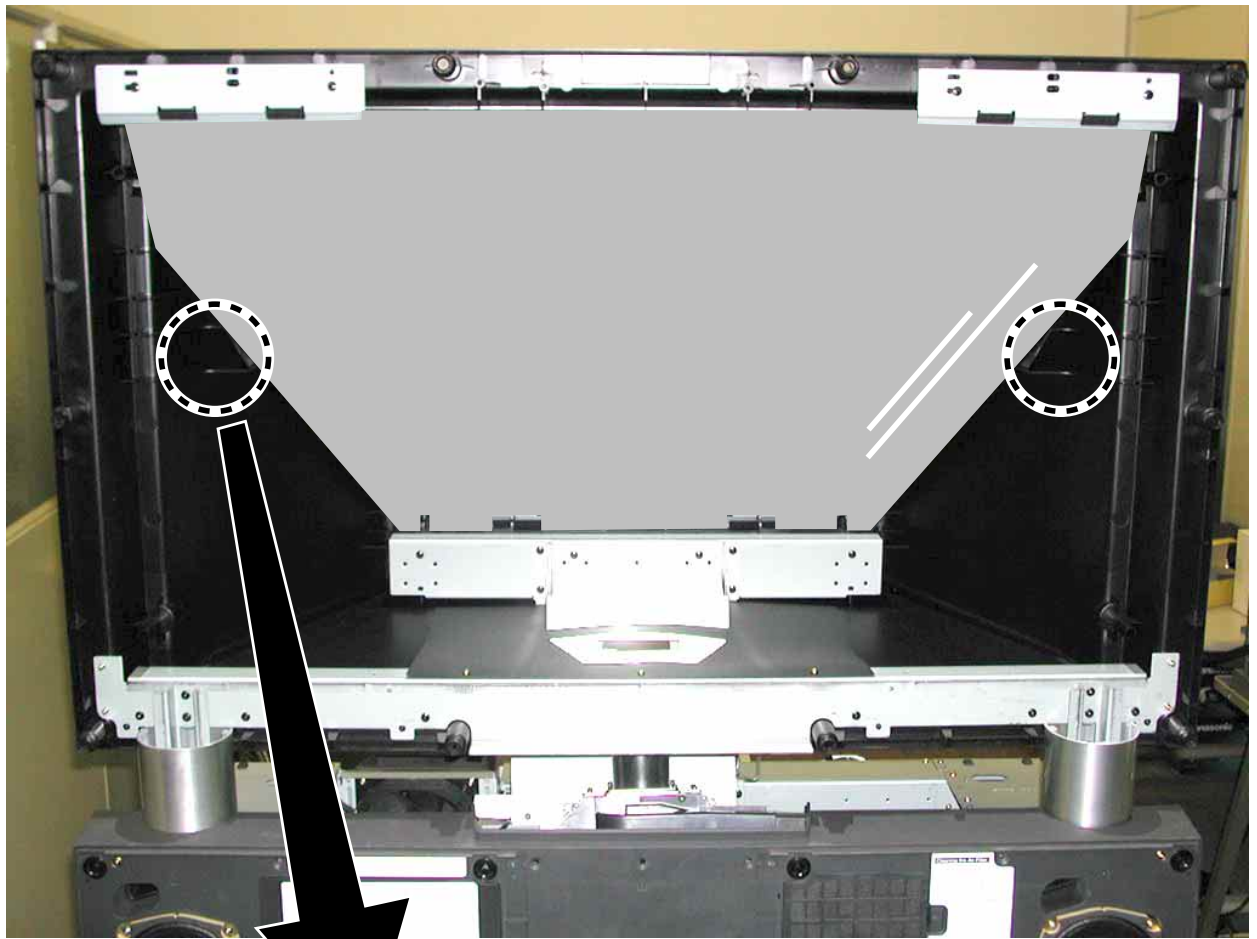
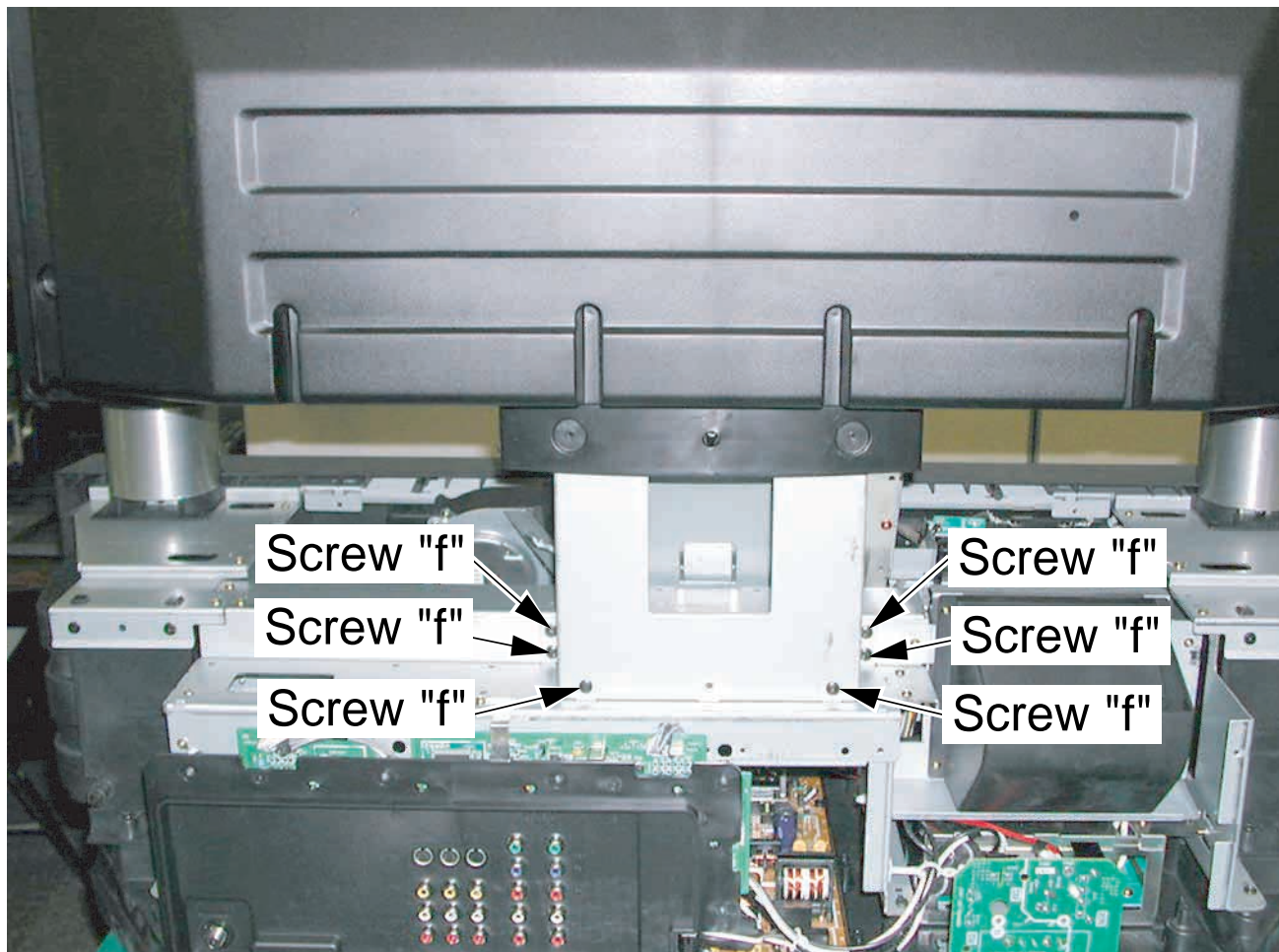
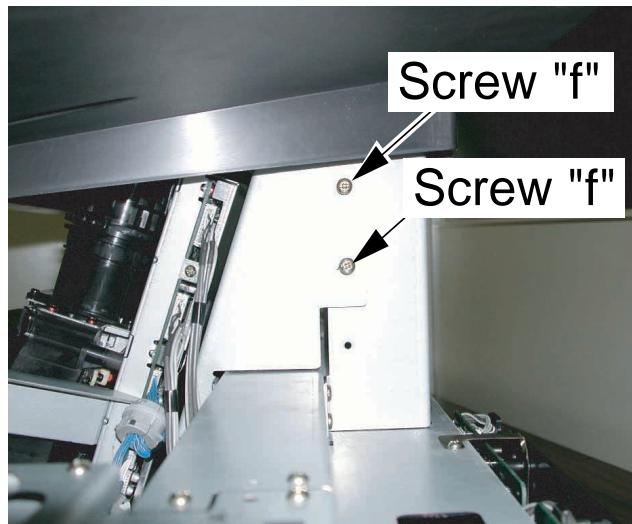
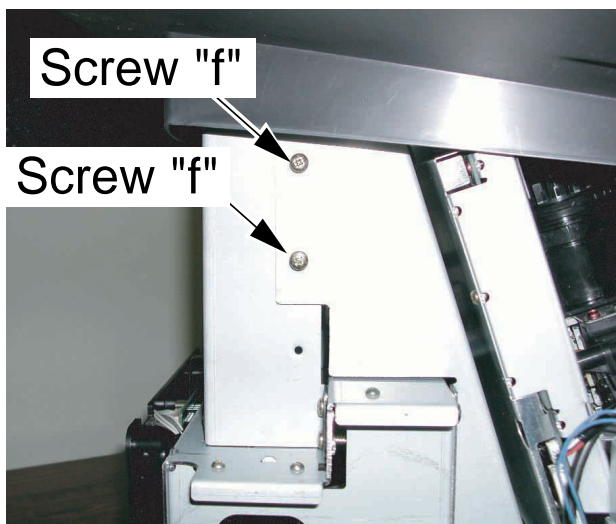


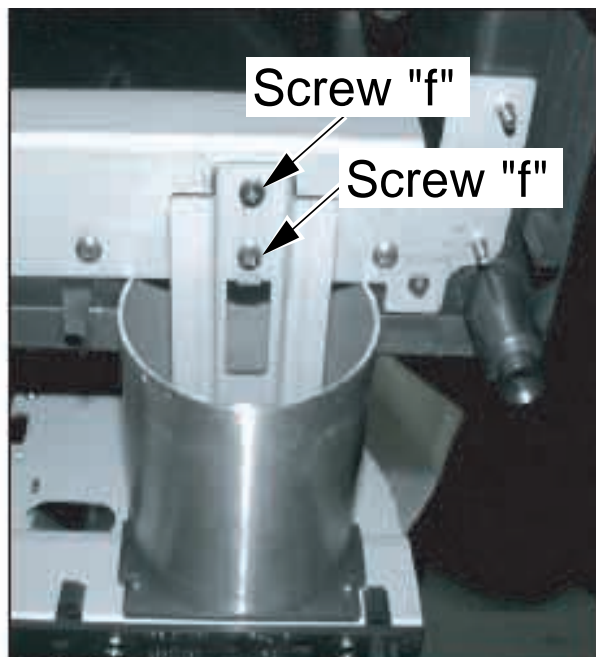
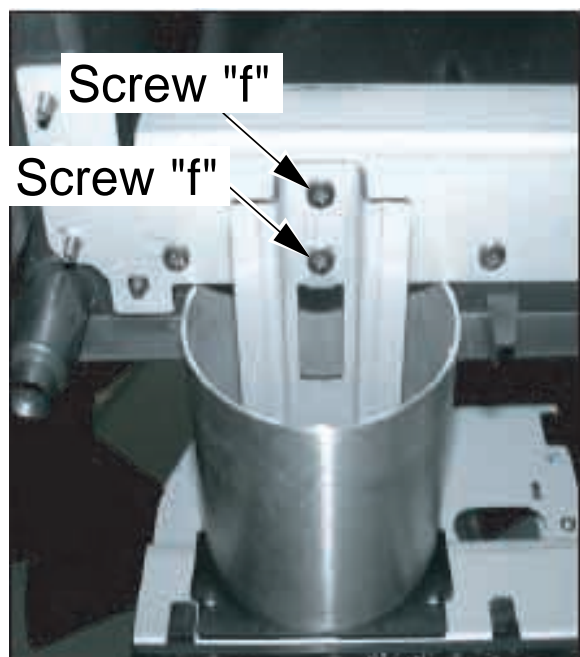
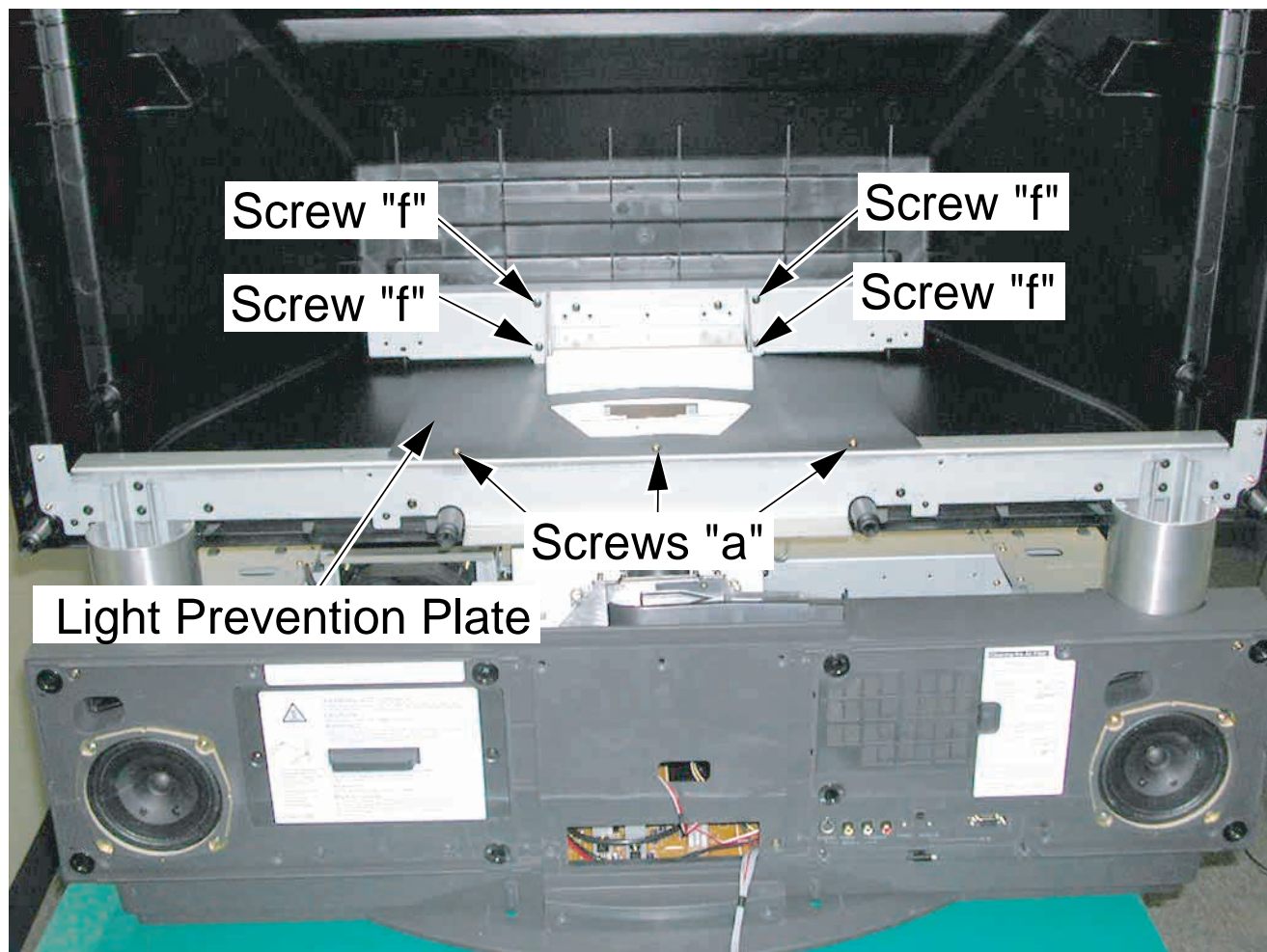
Fig. D5-3-2



<Rear View>



<Side View>



<Front View>

Fig. D5-6

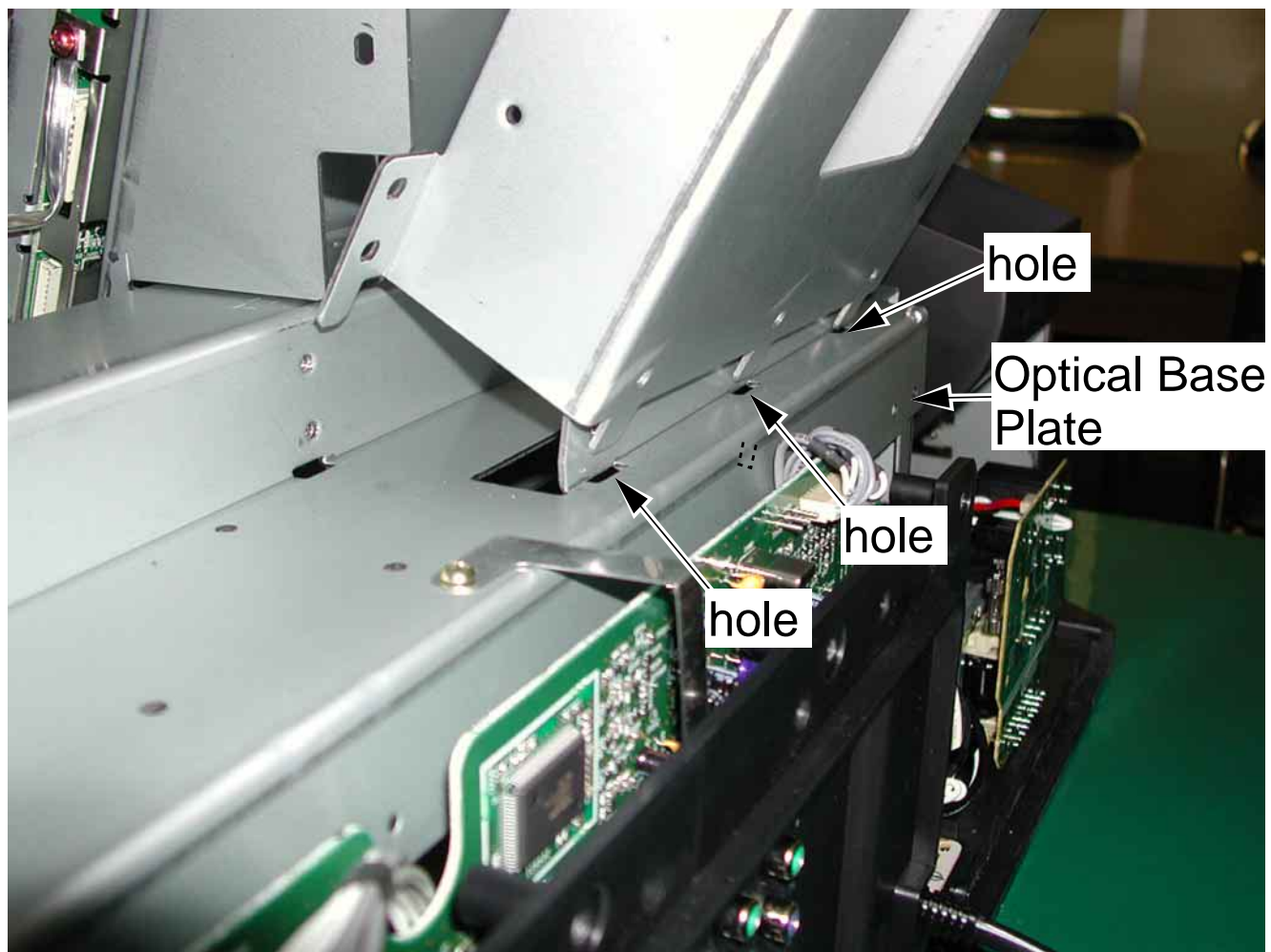
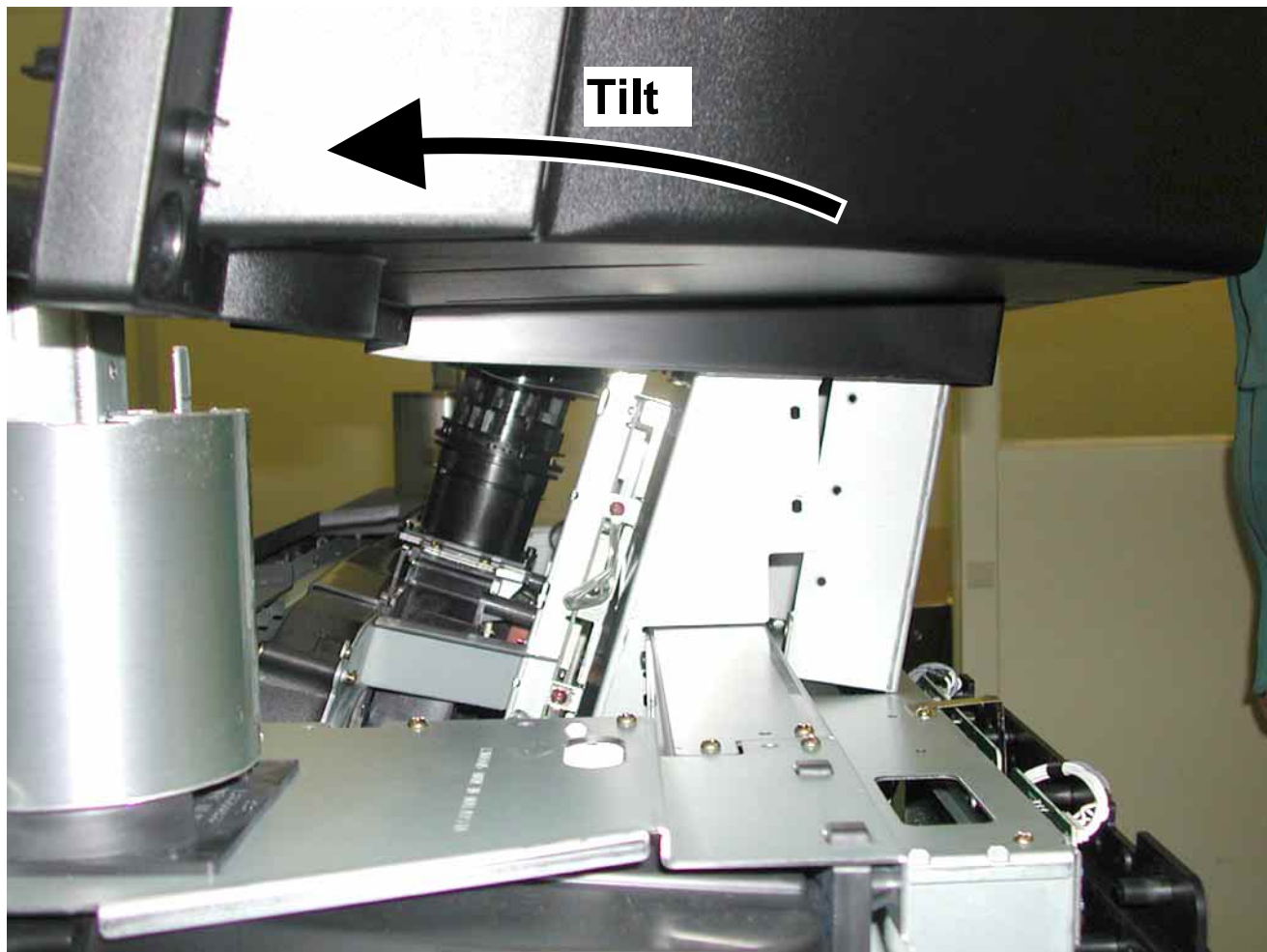
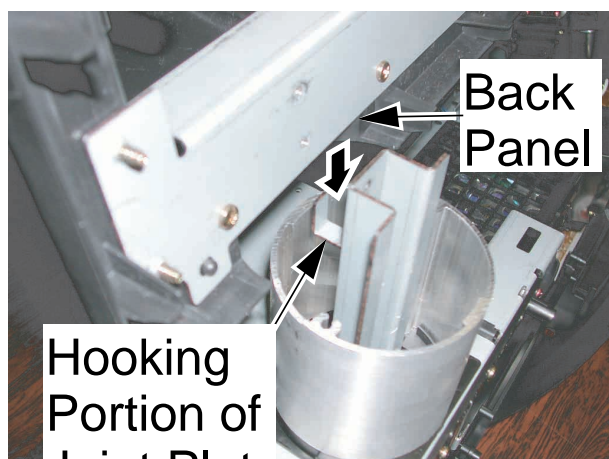


Fig. D5-7



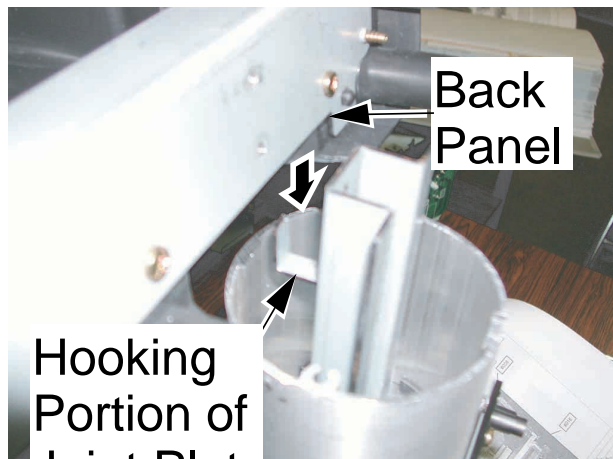
<Side View>



Hooking
Portion of
Joint Plate

Back
Panel

**<Front View>
(left)**



Hooking
Portion of
Joint Plate

Back
Panel

**<Front View>
(right)**

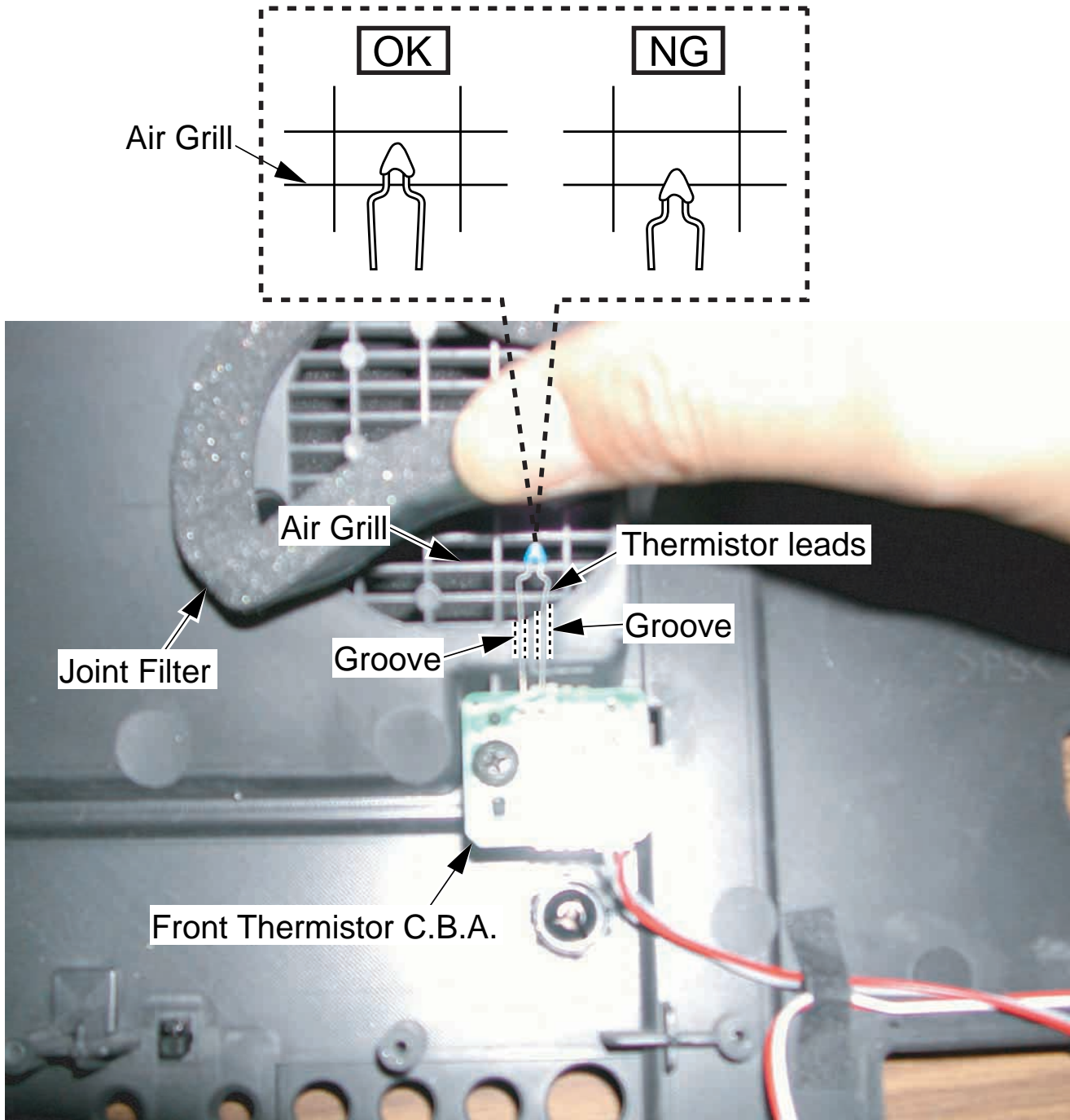
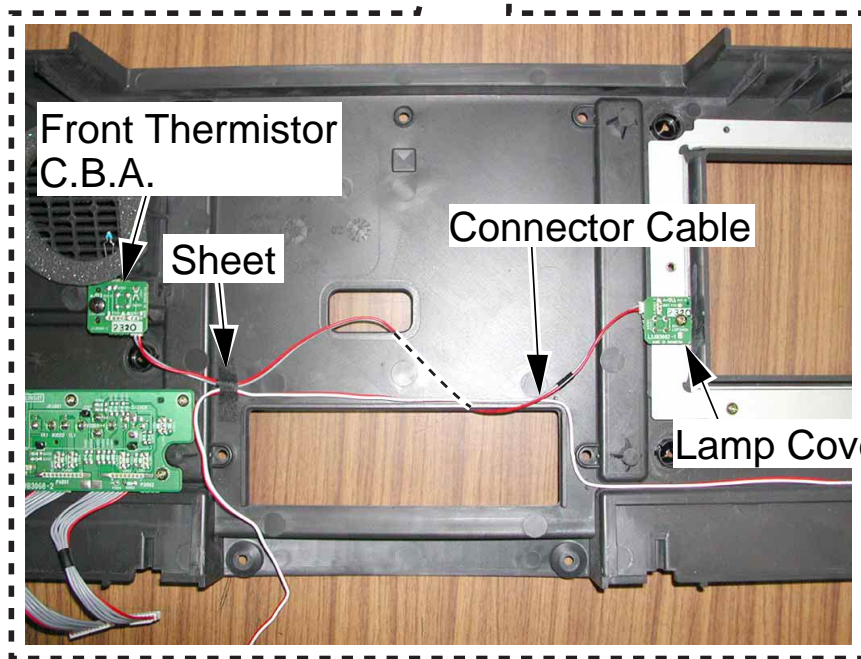
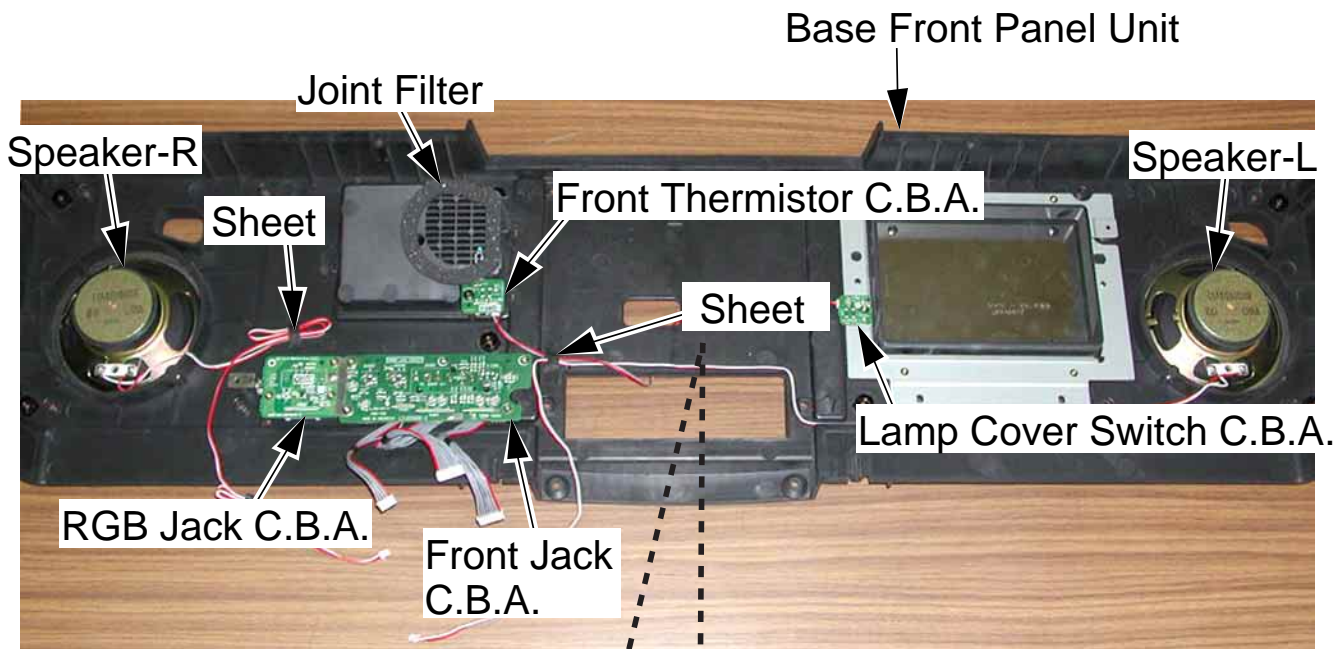


Fig. D6-1



Wiring of Connector Cable

Fig. D6-3

I/O CHART OF IC6001

Pin No.	I/O	Port No.	Signal Name	Description
1	I	P64	POWER_DOWN_L	POWER DOWN(L)
2	-	P63	NC	(Not used)
3	-	P62	NC	(Not used)
4	-	P61	NC	(Not used)
5	I	P60	IR_DATA	IR-DATA
6	-	P54	NC	(Not used)
7	I	P52	DTS_REQ	DTS(IC6501) REQUEST(L)
8	I/O	P53	DTS_CS/BUSY	DTS(IC6501) CS(L)/BUSY(L)
9	I	P51	OSD_BUSY	OSD(IC9510) BUSY(H)
10	O	P50	OSD_CS	TV OSD(IC9510) CS(L)
11	O	P07	OSD_SCK	TV OSD SERIAL CLOCK
12	-	P06	NC	(Not used)
13	O	P05	OSD_DATA_OUT	TV OSD SERIAL DATA
14	O	P02	SCK	SERIAL CLOCK
15	I	P01	S_DATA_IN	SERIAL DATA 1
16	O	P00	S_DATA_OUT	SERIAL DATA 0
17	I/O	P27	I2C_DATA	I2C SERIAL DATA
18	O	P26	I2C_CLK	I2C SERIAL CLOCK
19	-	P46	NC	(Not used)
20	O	P44	M_CC_CS_L	MAIN CCV(IC5001) CS(L)
21	O	P42	S_CC_CS_L	SUB CCV(IC5302) CS(L)
22	O	P40	PROJ_CPU_CS	PROJECTOR MICROCONTROLLER(IC2301) CS(L)
23	-	-	NC	(Not used)
24	-	-	NC	(Not used)
25	I	P04	RST_L	RESET(L)
26	O	P17	A_SW_CTL_2	AUDIO SWITHING CONTROL 2 ※1
27	O	P16	A_SW_CTL_1	AUDIO SWITHING CONTROL 1 ※1
28	O	P15	CPN1_H	COMPONENT 1(H)/COMPONENT 2(L)
29	O	P14	PC1_H	PC(H)/SUB VIDEO(L)
30	O	P13	COMP_VIDEO_COMP_H	COMPONENT (H)/S-VIDEO & VIDEO(L)
31	-	P12	P12	(Not used)
32	O	P11	M_VIDEO_S_IN_H	S-VIDEO(H)/VIDEO(L)
33	-	-	NC	(Not used)
34	-	-	NC	(Not used)
35	I	P25	S_LINE_SD_L	SUB LINE SIGNAL(L)
36	I	-	DVDD	VDD (+5V)
37	O	-	OSC_OUT	OSC 2 (14.32MHz)
38	I	-	OSC_IN	OSC 1 (14.32MHz)
39	-	-	DVSS	Ground
40	-	P24	NC	(Not used)
41	-	P23	NC	(Not used)
42	-	-	SXI	SXI
43	O	P22	TV_DEFEAT_H	TUNER AUDIO DEFEAT(H)
44	O	P21	TV_MONO_H/MTS_L	TUNER MONO(H)/STEREO(L)
45	O	P20	TV_MAIN_L/SAP_H	TUNER MAIN(L)/SAP(H)
46	I	PB7	TV_MTS_IN_L	TUNER MTS SIGNAL(L)
47	I	PB6	TV_SAP_IN_L	TUNER SAP SIGNAL(L)
48	-	-	OSD_VSS	Ground
49	-	PB5	NC	(Not used)
50	-	PB4	PB4	(Not used)

※1

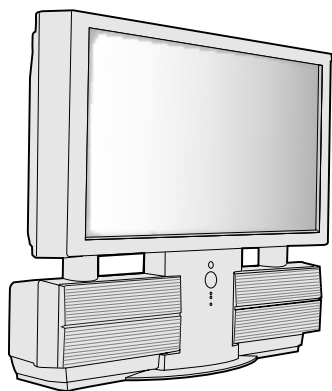
Pin 26	Pin 27	OUTPUT
L	L	COMPONENT 1
L	H	COMPONENT 2
H	H	-----
H	L	PC (RGB)

Pin No.	I/O	Port No.	Signal Name	Description
51	I	-	OSD_VDD	VDD (+5V)
52	-	PB3	NC	(Not used)
53	-	PB2	NC	(Not used)
54	-	PB1	NC	(Not used)
55	-	PB0	NC	(Not used)
56	-	PA7	NC	(Not used)
57	-	PA6	NC	(Not used)
58	I	PA5	L3_YC_SIGIN_L	LINE3 S-VIDEO INPUT TERMINAL CONNECT(L)/NO CONNECT(H)
59	I	PA4	L2_YC_SIGIN_L	LINE2 S-VIDEO INPUT TERMINAL CONNECT(L)/NO CONNECT(H)
60	I	PA3	L1_YC_SIGIN_L	LINE1 S-VIDEO INPUT TERMINAL CONNECT(L)/NO CONNECT(H)
61	I	PA2	L3_CPS_NOSIG_L	LINE3 VIDEO INPUT TERMINAL CONNECT(H)/NO CONNECT(L)
62	I	PA1	L2_CPS_NOSIG_L	LINE2 VIDEO INPUT TERMINAL CONNECT(H)/NO CONNECT(L)
63	I	PA0	L1_CPS_NOSIG_L	LINE1 VIDEO INPUT TERMINAL CONNECT(H)/NO CONNECT(L)
64	I	P92	CPN2_NOSIG_L	COMPONENT 2 INPUT TERMINAL CONNECT(H)/NO CONNECT(L)
65	-	-	NC	(Not used)
66	I	P91	CPN1_NOSIG_L	COMPONENT 1 INPUT TERMINAL CONNECT(H)/NO CONNECT(L)
67	-	-	FGF	(Not used)
68	-	-	AFG	(Not used)
69	-	-	NC	(Not used)
70	-	-	NC	(Not used)
71	-	-	AVSS	Ground
72	-	-	NC	(Not used)
73	I	-	AVDD	VDD (+5V)
74	-	-	RCTL_P	(Not used)
75	-	-	RCTL_N	(Not used)
76	-	-	NC	(Not used)
77	-	P90	NC	(Not used)
78	O	PC3	LINE_MUTE_H	AUDIO LINE OUT MUTE(H)
79	O	PC2	AMP_MUTE_H	AUDIO AMP MUTE(H)
80	O	PC1	AMP_MUTE_L	AUDIO AMP MUTE(L)
81	O	PC0	AUDIO_SW_MUTE_H	AUDIO SW MUTE(H)
82	I	P87	IIC_SVC_L	I2C SERVICE(L)
83	O	P86	FAN3_ON_H	DUCT FAN ON(H)
84	O	P85	FAN3_SD_H	DUCT FAN SPEED CONTROL (HIGH SPEED(H)LOW SPEED(L))
85	I	P84	FAN3_LOCK_H	DUCT FAN LOCK(H)
86	I	P83	THERMO_4	TEMPERATURE DATA 4 (FOR LAMP)
87	I	P82	THERMO_3	TEMPERATURE DATA 3 (FOR LAMP)
88	I	P81	KEYIN1	KEY DATA 1
89	I	P80	KEYIN0	KEY DATA 0
90	O	P77	POWER_ON_L	POWER ON(L)
91	O	P76	PROJ_P_ON_H	PROJECTOR POWER ON(H)
92	O	P75	AMP_POWER_ON_L	AUDIO AMP POWER ON(L)
93	-	P74	NC	(Not used)
94	O	P73	TEMP_LED	TEMP LED ON(L)
95	O	P72	LAMP_LED	LAMP LED ON(L)
96	O	P71	P_LED_R	POWER LED(RED) ON(L)
97	O	P70	P_LED_G	POWER LED(GREEN) ON(L)
98	-	P67	NC	(Not used)
99	-	P66	NC	(Not used)
100	O	P65	SYSTEM_RST_L	RESET(L)

I/O CHART OF IC2301

Pin No.	I/O	Port No.	Signal Name	Description
1	O	P21	VCR_PROJ_PVDATA	SERIAL DATA 1
2	I	P22	VCR_PROJ_SCK	SERIAL CLOCK
3	I	P23	RXD	RS232C RECEIVED DATA
4	O	P24	TXD	RS232C TRANSMITTED DATA
5	-	P25	NC	(Not used)
6	I	-	VDD	VDD (+3.3V)
7	-	-	VSS	Ground
8	-	P26	NC	(Not used)
9	-	P27	NC	(Not used)
10	-	P30	SYS_HS	(Not used)
11	I	P31	L_ERR	LAMP ERROR PULSE (ON(H)/OFF(L)/ERROR(PULSE))
12	I	P32	FAN_LOCK	FRONT/LAMP FAN LOCK(H)
13	-	P33	NC	(Not used)
14	-	P34	NC	(Not used)
15	-	P35	NC	(Not used)
16	-	P36	NC	(Not used)
17	-	P37	NC	(Not used)
18	O	-	VPP	(Not used) <Factory use only>
19	-	P100	NC	(Not used)
20	O	P101	SOL_ON_H	SOLENOID(SHUTTER) ON(H)
21	-	P102	NC	(Not used)
22	-	P103	NC	(Not used)
23	O	P104	PO_EXT_SEL	MAIN SCALER SYNC SELECT (EXTERNAL(H)/INTERNAL(L))
24	O	P105	IP_CLK_ON_H	IP CONVERTER CLOCK ON(H)
25	O	P106	IP_RESET_L	IP CONVERTER RESET(L)
26	-	P107	NC	(Not used)
27	-	P110	VPP_ON_H	(Not used)
28	-	P111	NC	(Not used)
29	-	P112	NC	(Not used)
30	-	P113	NC	(Not used)
31	I	-	RESET	RESET(L)
32	-	P114	NC	(Not used)
33	-	-	XT2	(Not used)
34	I	-	VDD	VDD (+3.3V)
35	O	-	X2	19.66 MHz CLOCK
36	I	-	X1	19.66 MHz CLOCK
37	-	-	VSS	Ground
38	-	-	NC	(Not used)
39	-	P120	NC	(Not used)
40	O	P90	LR_INV	LEFT AND RIGHT REVERSAL CONTROL OF DISPLAY PICTURE
41	O	P91	SYNC_SEL	A KIND OF SIGNAL DETECTION FOR IC9204 (MAIN SCALER(L)/SUB SCALER(H))
42	-	P92	NC	(Not used)
43	-	P93	VIDEO/480I_L	(Not used)
44	I	P94	3.3V_IN	3.3V LINE DETECT (NORMAL(H)/ABNORMAL(L))
45	I	P95	7V_IN	7V LINE DETECT (NORMAL(H)/ABNORMAL(L))
46	O	P96	L_RESET(STBY)	STANDBY(L)/NORMAL(H)
47	I	P40	14V_IN	14V LINE DETECT (NORMAL(H)/ABNORMAL(L))
48	I	P41	16V_IN	16V LINE DETECT (NORMAL(H)/ABNORMAL(L))
49	O	P42	LCD_ON_H	LCD POWER ON(H)
50	O	P43	D_RESET	RESET(L)

Pin No.	I/O	Port No.	Signal Name	Description
51	-	P44	NEW_OSD_H	(Not used) <Factory use only>
52	O	P45	L_ON_H	LAMP ON/OFF CONTROL (ON(H)/OFF(L))
53	O	P46	FAN1_ON_H	FRONT FAN ON(H)
54	O	P47	FAN2_ON_H	LAMP FAN ON(H)
55	I	-	BVDD	VDD (+3.3V)
56	-	-	BVSS	Ground
57	O	P50	TG_CS	TIMING GENERATOR(IC9503) CS (H)
58	O	P51	MAIN_SCALER_CS	MAIN SCALER(IC9202) CS (L)
59	O	P52	SUB_SCALER_CS	SUB SCALER(IC9508) CS (L)
60	O	P53	COLOR_COR_CS	COLOR CORRECTION(IC9801) CS (L)
61	O	P54	DAC1_CS_H	DAC(IC9803) CS (H)
62	-	P55	DAC2_CS_H	(Not used)
63	O	P56	OSD_CS	OSD(IC9510) CS(L)
64	O	P57	SYNC_CS	SYNC SELECTOR(IC9204) CS (L)
65	-	P60	XL_CS	(Not used)
66	O	P61	VCR_OSD_H	TV OSD CS(H)/PROJECTOR OSD CS(L)
67	O	P62	CORRECT_ON_L	NON-UNIFORMITY COLOR CORRECT ON(L)/THROUGH(H)
68	-	P63	PC1_H	(Not used)
69	O	P64	PC/VIDEO_PC_H	PC(H)/SUB VIDEO(L)
70	-	P65	COMP/VIDEO_COMP_H	(Not used)
71	I	-	AVDD	VDD (+3.3V)
72	-	-	AVSS	Ground
73	I	-	AYREF	VDD (+3.3V)
74	I	P70	THERMO1_IN	TEMPERATURE DATA 1 (FOR FRONT FAN)
75	I	P71	THERMO2_IN	TEMPERATURE DATA 2 (FOR FRONT FAN)
76	I	P72	FILTER_OPEN_H	LAMP COVER OPEN(H)
77	-	P73	PC_NC_H	(Not used)
78	-	P74	SELF_CHECK_H	(Not used)
79	-	P75	MAIN_NC_H	(Not used)
80	I	P76	CPS_L	COMPOSITE IN DETECT (L)
81	-	P77	INTLACE	(Not used)
82	I	P80	FILTER_ERR_IN	FILTER ERROR DETECTION (A/D IN)
83	-	P81	THERMO4_IN	(Not used)
84	-	P82	MODE_CHG_H	(Not used) <Factory use only>
85	-	P83	FLASH_WRITE_H	(Not used) <Factory use only>
86	-	P00	NMI	Ground
87	-	P01	NC	(Not used)
88	I	P02	FROM_VCR_CS	IC2301 CS(L) FROM IC6001
89	-	P03	NC	(Not used)
90	-	P04	NC	(Not used)
91	-	P05	NC	(Not used)
92	-	P06	NC	(Not used)
93	-	P07	NC	(Not used)
94	I/O	P10	IIC_DATA	I2C SERIAL DATA
95	-	P11	NC	(Not used)
96	O	P12	IIC_SCK	I2C SERIAL CLOCK
97	I	P13	PROJ_IC_SI	PROJECTOR SERIAL DATA 1
98	O	P14	PROJ_IC_SO	PROJECTOR SERIAL DATA 0
99	O	P15	PROJ_IC_SCK	PROJECTOR SERIAL CLOCK
100	I	P20	VCR_PROJ_VPDATA	SERIAL DATA 0



Panasonic®

Multi-Media Projection Display Operating Instructions

Models No. **PT-40LC12/PT-45LC12**



For assistance, please call :
1-888-VIEW PTV(843-9788)
or send e-mail to :
consumerproducts@panasonic.com
or visit us at **www.panasonic.com**
(USA)

For assistance, please call :
787-750-4300
or visit us at **www.panasonic.com**
(Puerto Rico)

Three Important Reasons to Register Your Product Immediately!

1 Protect Your New Investment...

Register your new projection display for insurance purposes in case your new projection display is stolen.

2 Product safety notification...

Registering your product can help us to contact you in the unlikely event a safety notification is required under the Consumer Product Safety Act.

3 Improved Product Development...

Help us continue to design products that meet your needs.

Register online at **www.panasonic.com/register**

Important Safety Instructions



This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.



This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

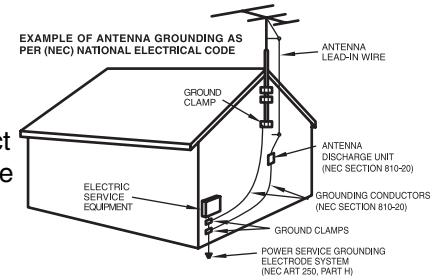


The pictorial representation of a hot surface within a triangle is intended to tell the user that parts inside the product are a risk of burns to persons.

Note to CATV System Installer: This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Important Safety Instructions For Projection display

1. Read and apply the operating instructions provided with your projection display.
2. Read all of the instructions given here and retain them for later use.
3. Follow all warnings and instructions marked on the projection display.
4. Unplug this projection display from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
5. Do not use attachments / accessories not recommended by the projection display manufacturer as they may cause hazards.
6. Do not use this projection display near water. For example: Avoid placing it near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.
7. Do not place this projection display on an unstable cart, stand or table. The projection display may fall, causing serious injury to a child or adult, and serious damage to the appliance. Use only with a cart or stand recommended by the manufacturer, or sold with the projection display.
- 7A. An appliance and cart combination shall be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
8. Slots and openings in the cabinet and the back are provided for ventilation, to ensure reliable operation of the projection display and to protect it from overheating. These openings must not be blocked or covered. There shall be at least 10 cm of space from these openings. The openings shall never be blocked by placing the projection display on a bed, sofa, rug or other similar surface. This projection display shall never be placed near or over a radiator or heat register. This projection display shall not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.
9. Operate only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home consult your television dealer or local power company.
10. This projection display is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
11. Do not allow anything to rest and to pinch on the power cord. Do not locate this projection display where the power cord will be walked on.
12. Do not overload wall outlets and extension cords as this can result in fire or electric shock.
13. Never push objects of any kind into this projection display through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the projection display.



14. If an outside antenna is connected to the television equipment, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. In the U.S. Selection 810 of the National Electrical Code provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure.
15. For added protection for this projection display during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna. This will prevent damage to the receiver due to lightning and power-line surges.
16. An outside antenna system shall not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system extreme care shall be taken to keep from touching such power lines or circuits as contact with them might be fatal.
17. Unplug this projection display from the wall outlet, and refer servicing to qualified service personnel under the following conditions:
 - a. When the power cord or plug is damaged or frayed.
 - b. If liquid has been spilled into the projection display.
 - c. If the projection display has been exposed to rain or water.
 - d. If the projection display does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the projection display to normal operation.
 - e. If the projection display has been dropped or the cabinet has been damaged.
 - f. When the projection display exhibits a distinct change in performance - this indicates a need for service.
18. Do not attempt to service this projection display yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
19. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
20. Upon completion of any service or repairs to this projection display, ask the service technician to perform routine safety checks to determine that the projection display is in safe operating condition.
21. **WARNING: To prevent fire or shock hazard, do not expose this appliance to rain or moisture.**
22. **WARNING:** Because the temperature of the lamp unit is elevated immediately after its use, directly touching it may cause burns. After the lamp has cooled enough, replace the lamp unit.
23. **CAUTION:** To prevent electric shock, match wide blade of plug to wide slot of AC outlet and fully insert. Do not use this (polarized) plug with a receptacle or other outlet unless the blade can be fully inserted to prevent blade exposure.

This product has a High Intensity Discharge (HID) lamp that contains a small amount of mercury. It also contains lead in some components.

Disposal of these materials may be regulated in your community due to environmental considerations.

For disposal or recycling information please contact your local authorities, or the Electronics Industries Alliance:

<<http://www.eiae.org>.>

Clean the air filter regularly. Not cleaning the air filter could shorten the life of the set.

The lamp has a maximum life of about 5 000 hours.

If use exceeds this figure, the possibility of lamp damage becomes greater.

The lamp should be changed as soon as possible once the lamp warning message appears.

If the lamp is damaged, please contact your nearest dealer.

When VIEWING MODE is set to CINEMA, brightness will be reduced, but the life of the LCD panel can be prolonged. Therefore, the CINEMA setting is recommended when possible.

Dear Panasonic Customer

Welcome to the Panasonic family of customers. We hope that you will have many years of enjoyment from your new projection television set.

To obtain maximum benefit from your set, please read these Instructions before making any adjustments, and retain them for future reference.

Retain your purchase receipt also, and record the serial number of your set in the space provided on the rear cover of these instructions.

Visit our Panasonic Web Site for USA : www.panasonic.com

For assistance, please call : 1-888-VIEW PTV(843-9788)

or send e-mail to : consumerproducts@panasonic.com

or visit us at www.panasonic.com

(USA)

For assistance, please call : 787-750-4300

or visit us at www.panasonic.com

(Puerto Rico)

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 - VESA and SVGA are trademarks of the Video Electronics Standard Association.
- Even if no special notation has been made of company or product trademarks, these trademarks have been fully respected.
- Equipped with **dbx**[®]-TV Noise Reduction for true MTS reproduction. **dbx**[®]-TV Noise Reduction is required for good stereo separation and audio fidelity. **dbx**[®] is a registered trademark, and is licensed by **dbx**[®] Technology Licensing.

FCC STATEMENT:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

FCC CAUTION:

To assure continued compliance and prevent undesirable interference, use only the provided shielded VGA cable with 2 ferrite cores while connecting the Projection display to a computer. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Declaration of Conformity

Model Number: **PT-40LC12/PT-45LC12**

Trade Name: **Panasonic**

Responsible party: Matsushita Electric Corporation of America.

Address: One Panasonic Way Secaucus New Jersey 07094

Telephone number: 1-888-VIEW PTV(843-9788)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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Enjoy
more !

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Getting Started

Basic Operation

Advanced Operation

Information

Before Using

Receiver Location

This unit is intended to be used with an optional stand or entertainment center. Consult your dealer for available options.

Locate for comfortable viewing. Avoid placing where sunlight or other bright light (including reflections) will fall on the screen.

Use of some types of fluorescent lighting can reduce remote control transmitter range.

Adequate ventilation is essential to prevent internal component failure. Keep away from areas of excessive heat or moisture.

Optional External Equipment

The Video / Audio connection between components can be made with shielded video and audio cables. For best performance, video cables should utilize 75 Ω coaxial shielded cables. Cables are available from your dealer or electronic supply house.

Before you purchase any cables, be sure you know what type of output and input connectors your various components require. Also determine the length of cable you'll need.

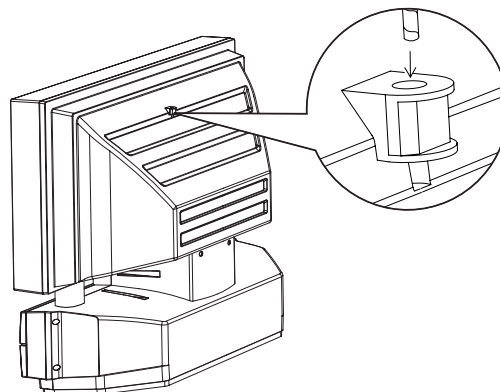
Safety Precaution

Please take safety precautions to prevent the unit from falling over.

The unit may fall over during earthquakes, or if someone stands on or shakes the projection display.

Fixing to a wall

Use a strong rope or a chain (not included) to fasten the projection display firmly to a strong support such as a wall or pillar.

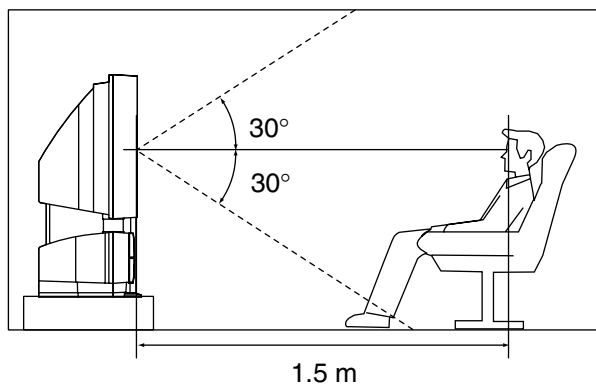


Viewing position

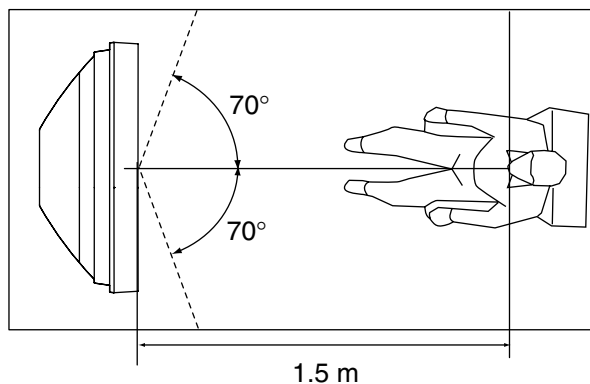
To optimize your viewing comfort, please follow the viewing guidelines shown in the diagrams below.

If viewing for an extended period of time, sit as far back from the screen as possible.

<Side view>



<Top view>



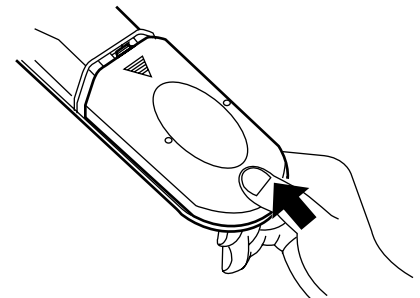
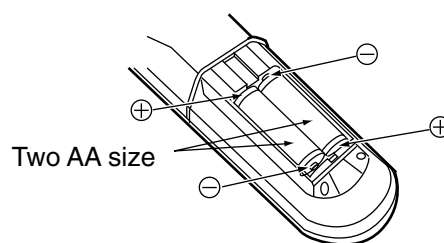
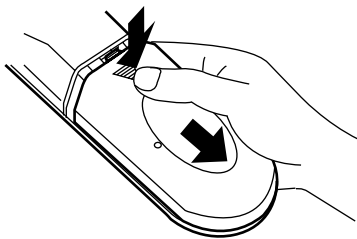
Accessories

- (1) Remote Control (EUR7603Z80)
- (2) Batteries 2 "AA"
- (3) RGB Cable (2 m) (LSJA0239-1 or LSJA0443)
- (4) Accessory Air Filter (LSYC0239)

Remote Control Battery Installation

Requires two AA batteries (supplied).

1. Turn the Transmitter face down.
Remove top cover by pressing down on marking and sliding cover off in the direction indicated.
2. Install the batteries as shown in the battery compartment.
(Polarity + or – must match the markings in the compartment).
3. Replace the cover and slide in reverse until the lock snaps.



Helpful Hint:

For frequent remote control users, replace old batteries with Alkaline batteries for longer life.

⚠ Precaution on battery use

Incorrect installation can cause battery leakage and corrosion that will damage the remote control transmitter.

Observe the following precautions:

1. Batteries should always be replaced as a pair. Always use new batteries when replacing the old set.
2. Do not mix battery types (example: "Zinc Carbon" with "Alkaline").
3. Do not attempt to charge, short-circuit, disassemble, heat or burn used batteries.
4. Battery replacement is necessary when the remote control acts sporadically or stops operating the projection display set.

Helpful Hint:

Whenever you remove the batteries, **you may need to reset the remote control infrared codes.** We recommend that you record the code on page 62, prior to setting up the remote.

Location of Controls

Illuminated Remote Control

POWER button

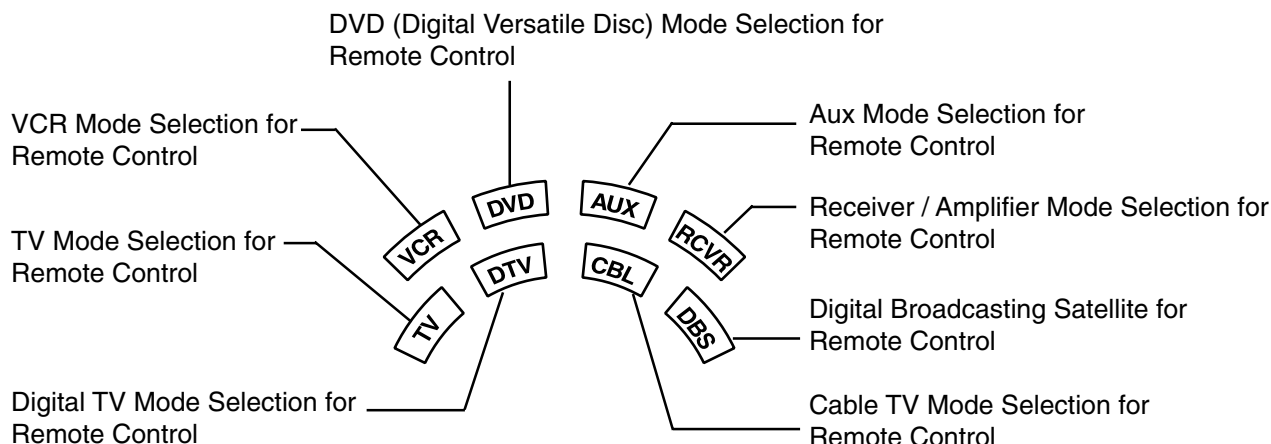
Press to turn the projection display ON or OFF. (P. 21)

MUTE button

Press this button to mute the sound. (P. 34)

Mode Selection buttons

Selects the operation mode for the remote control. (PP. 61-67)








Number keys





When 6 is pressed, channel 6 is displayed in single screen. (P. 29)

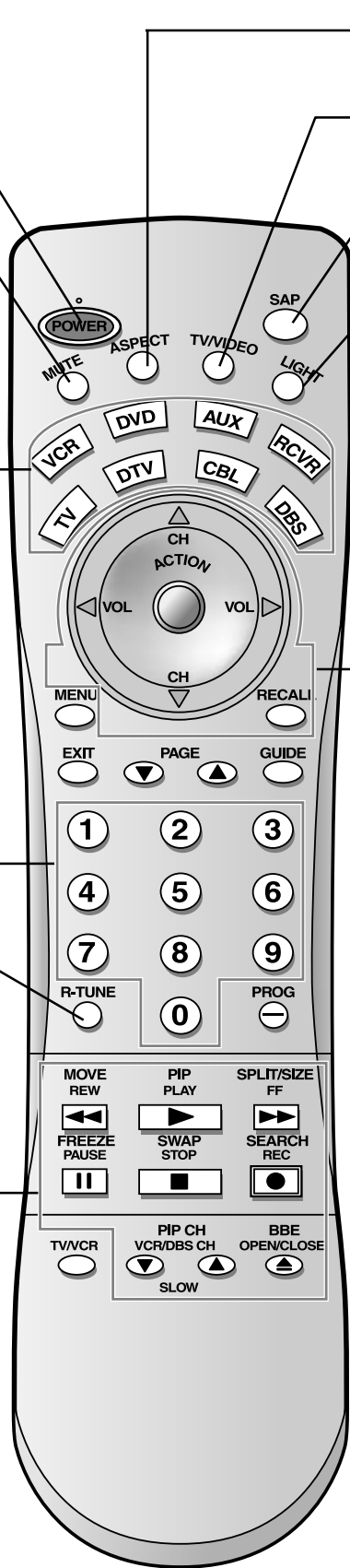
R-TUNE button

Press to view previous channel or video mode.

Function buttons

MOVE REW 	PIP PLAY 	SPLIT/SIZE FF 	FREEZE PAUSE 	SWAP STOP 
PIP Move (P. 39)	PIP ON/OFF (P. 38)	SPLIT Function/ PIP SIZE (PP. 36, 39)	FREEZE (P. 34)	PIP/SPLIT SWAP (PP. 37, 39)

SEARCH REC 	PIP CH VCR/DBS CH  SLOW	PIP CH VCR/DBS CH  SLOW	BBE OPEN/CLOSE 
CH Search (P. 32)	PIP/SPLIT CH Down (PP. 37, 39)	PIP/SPLIT CH Up (PP. 37, 39)	BBE sound ON/OFF (P. 43)



ASPECT button

Changes the screen size. (P. 30)

TV/VIDEO button

This input mode changes each time this button is pressed. (P. 33)

SAP button

Changes the audio mode. (P. 35)

Light button

Lights all buttons. The selected mode button (TV, VCR, etc.) flashes.

Changes to the next channel up

Reduces volume

Increases volume

Changes to the next channel down

The screen below is displayed for 5 seconds.

(P. 29)

Display menu
Press the ACTION button to display Menu screen

When the Menu screen is displayed, (PP. 22, 23)

Moves cursor upward during menu mode.

Moves cursor to the left during menu mode.

Sets the items.

Moves cursor downward during menu mode.

Moves cursor to the right during menu mode.

Returns to normal viewing from the MENU screen. Previous before item in MENU.

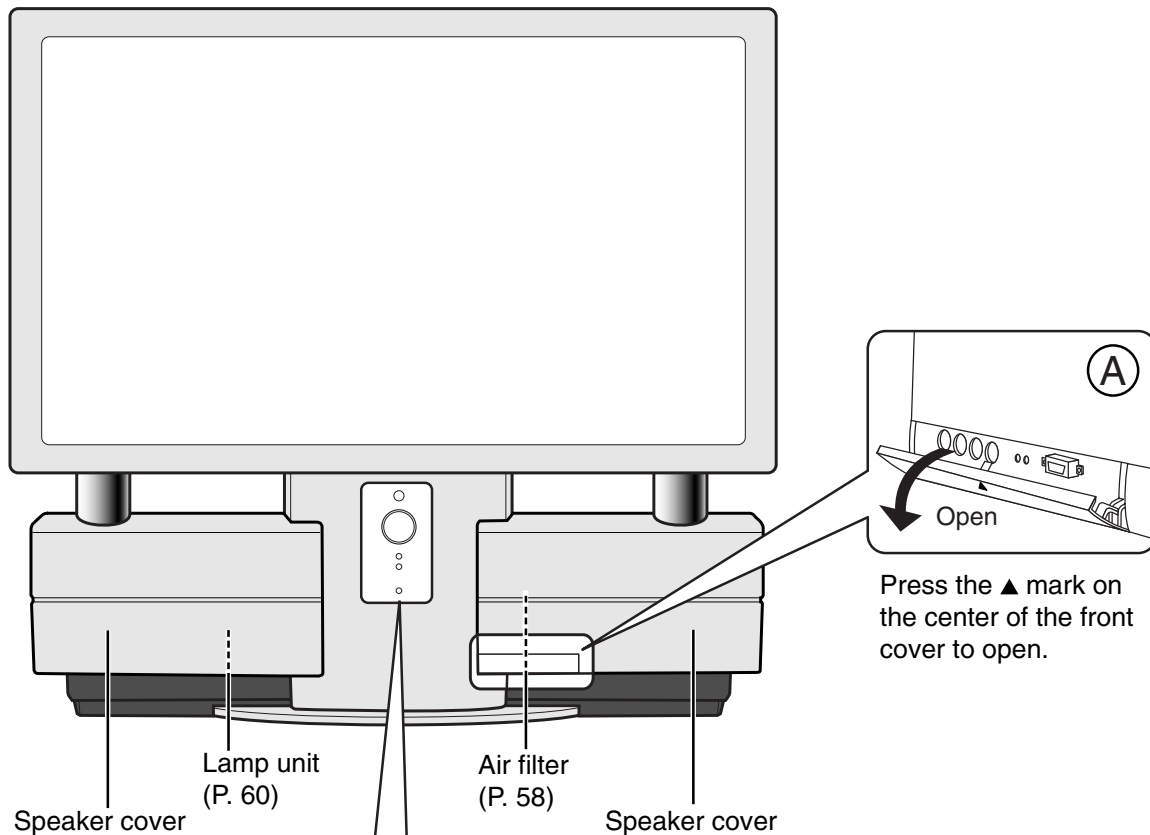
Note:

This section describes TV mode only. For other modes, see pages 61-67.

Location of Controls

Controls and Terminals on the projection display

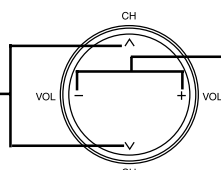
< FRONT >



POWER button/
POWER indicator
(P. 21)

Channel up / down buttons
(P. 29)

TEMP indicator
This indicator lights up when
there is an abnormal
temperature in the unit.
(P. 68)

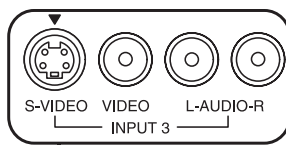


Volume up(+) / down(-) buttons
(P. 28)

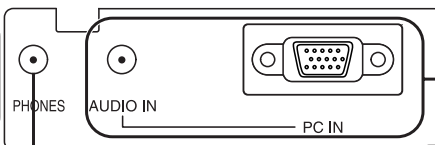
LAMP indicator
This indicator lights up when there
is a malfunction with the lamp unit.
(PP. 21, 60, 68)

Remote Control Sensor

A



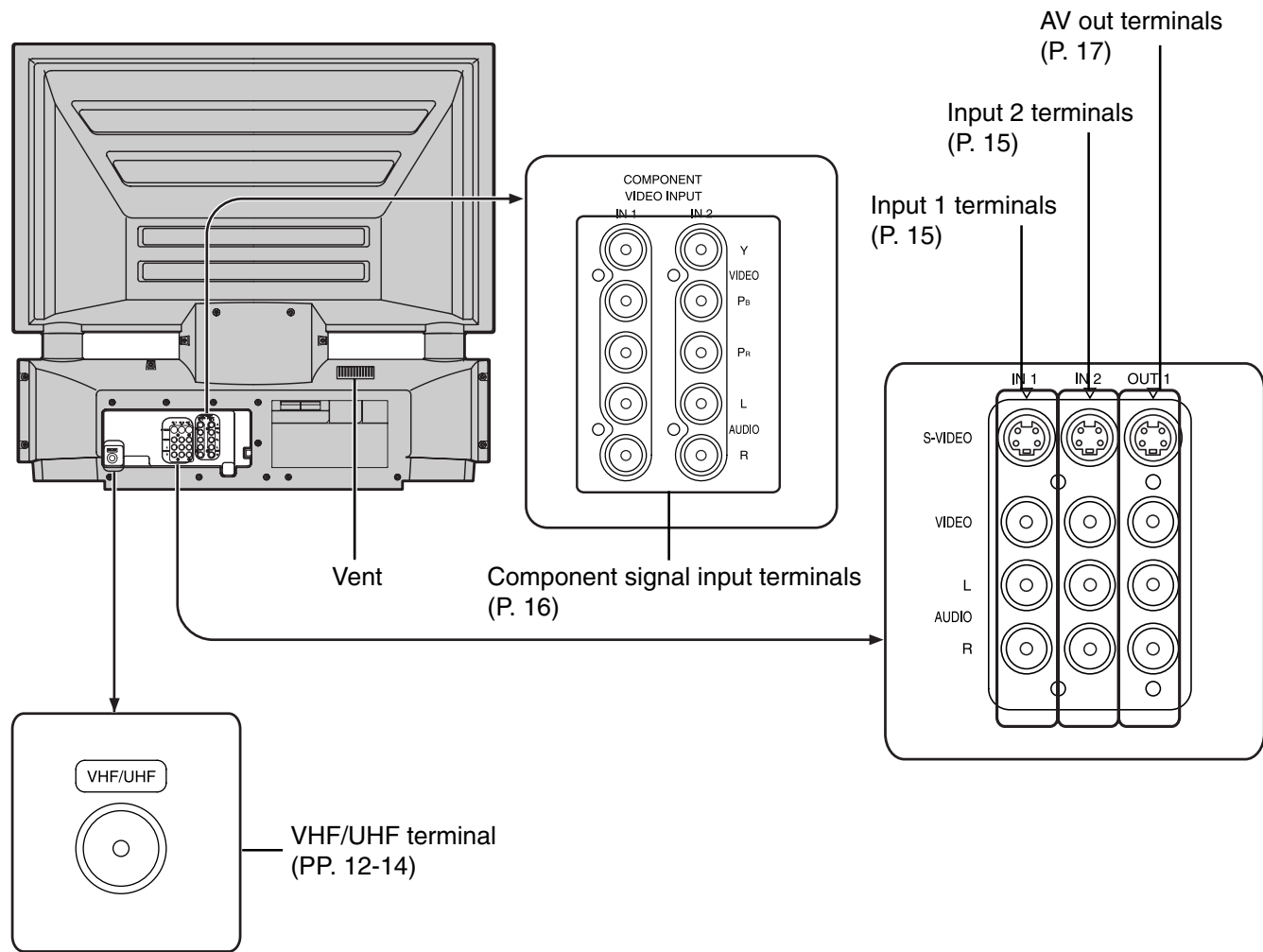
Input 3 terminals
(P. 15)



Phones jack
Connect an earphone/headphones
(not supplied) to the Phones jack.

PC Input terminal
(P. 18)

< REAR >



Note:
Make sure the vent is not clogged. (This could cause damage.)

Installation

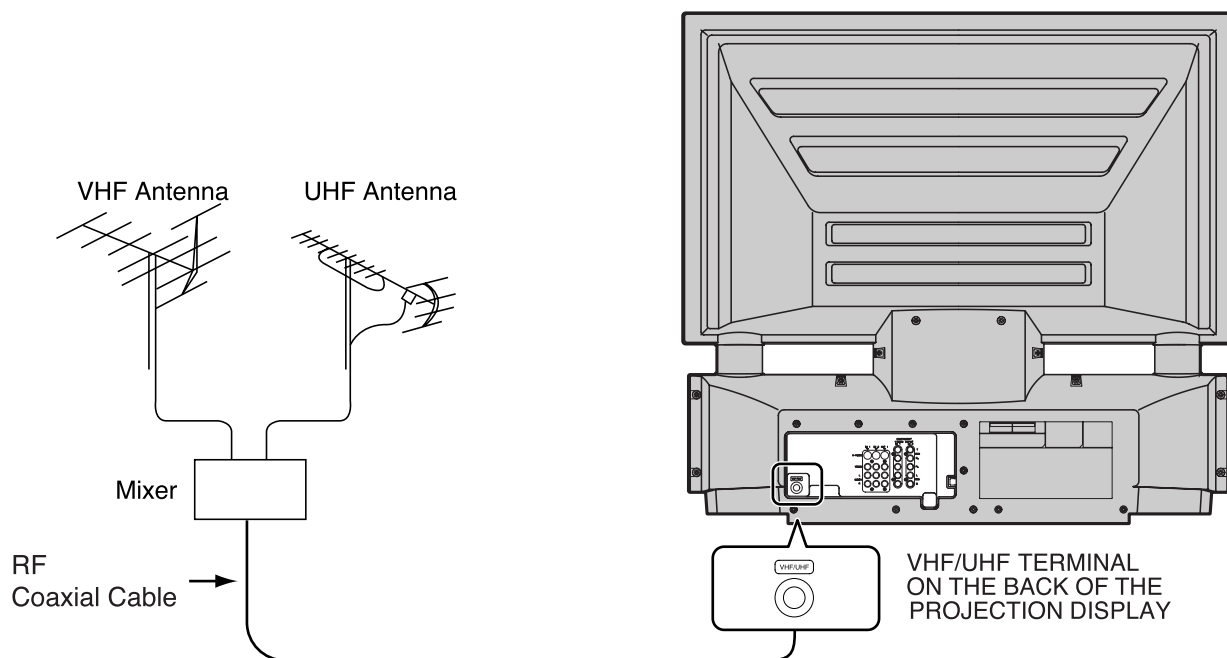
Notes on connections

- Turn off the power supply for all components before making any connections.
- If the cables necessary for connecting a component to the system are not included with the component or available as an option, you may need to fashion a cable to suit the component concerned.
- Read the instruction manual for each system component carefully before connecting it.
- If there is a lot of jitter in the video signal input from the video source, the picture on the screen may flicker. In this case, it will be necessary to connect a TBC (time base corrector).

Connecting the Antenna / Cable to the RF in Terminal (No VCR)

Antenna Connection

For proper reception of VHF / UHF channels, an external antenna is required. For best reception an outdoor antenna is recommended.

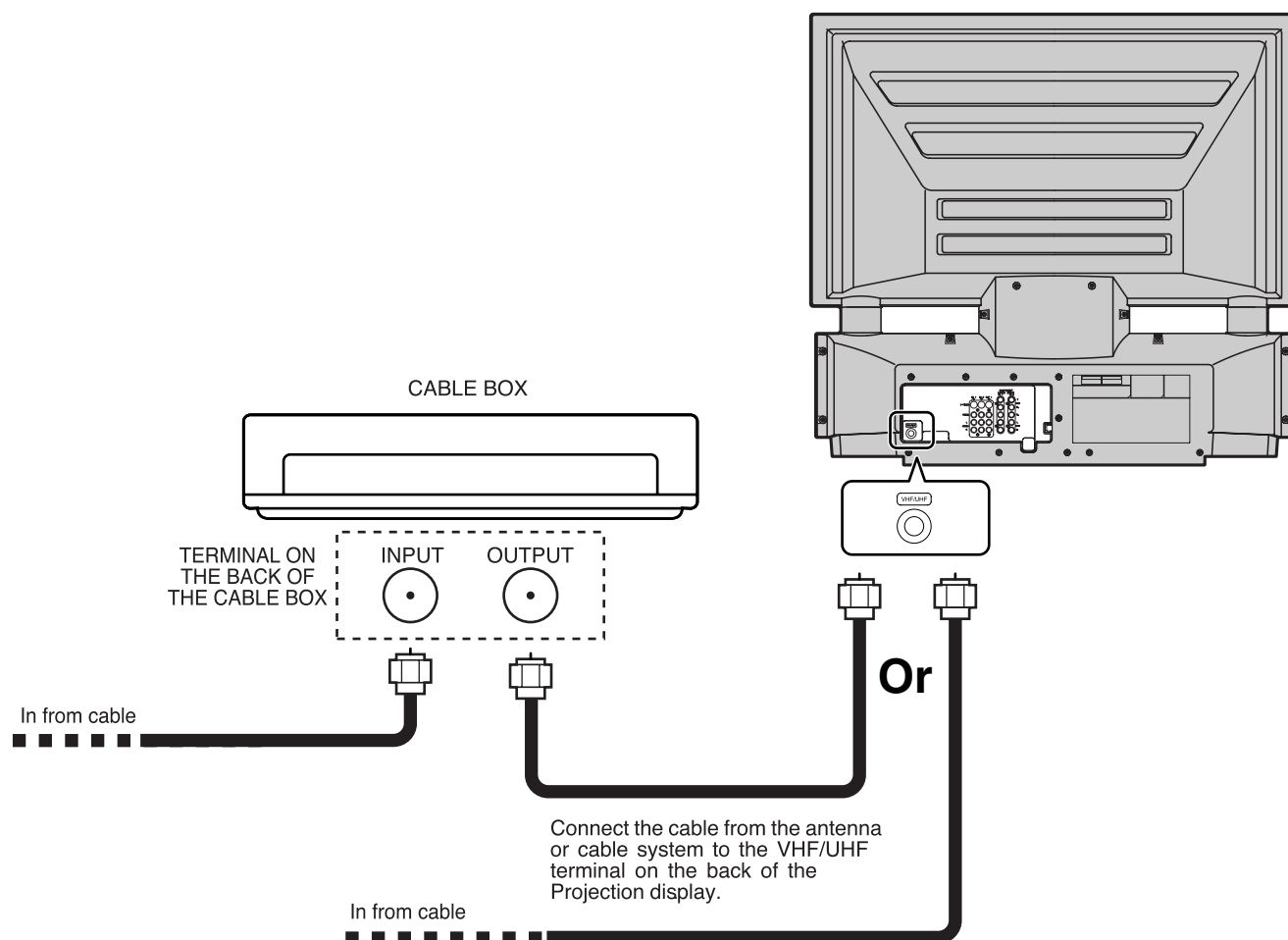


WARNING

When using "Nut type" RF coaxial cables, tighten with fingers only. Overtightening may damage terminals.

Cable Connection

Use this configuration when connecting the projection display to a cable TV system.



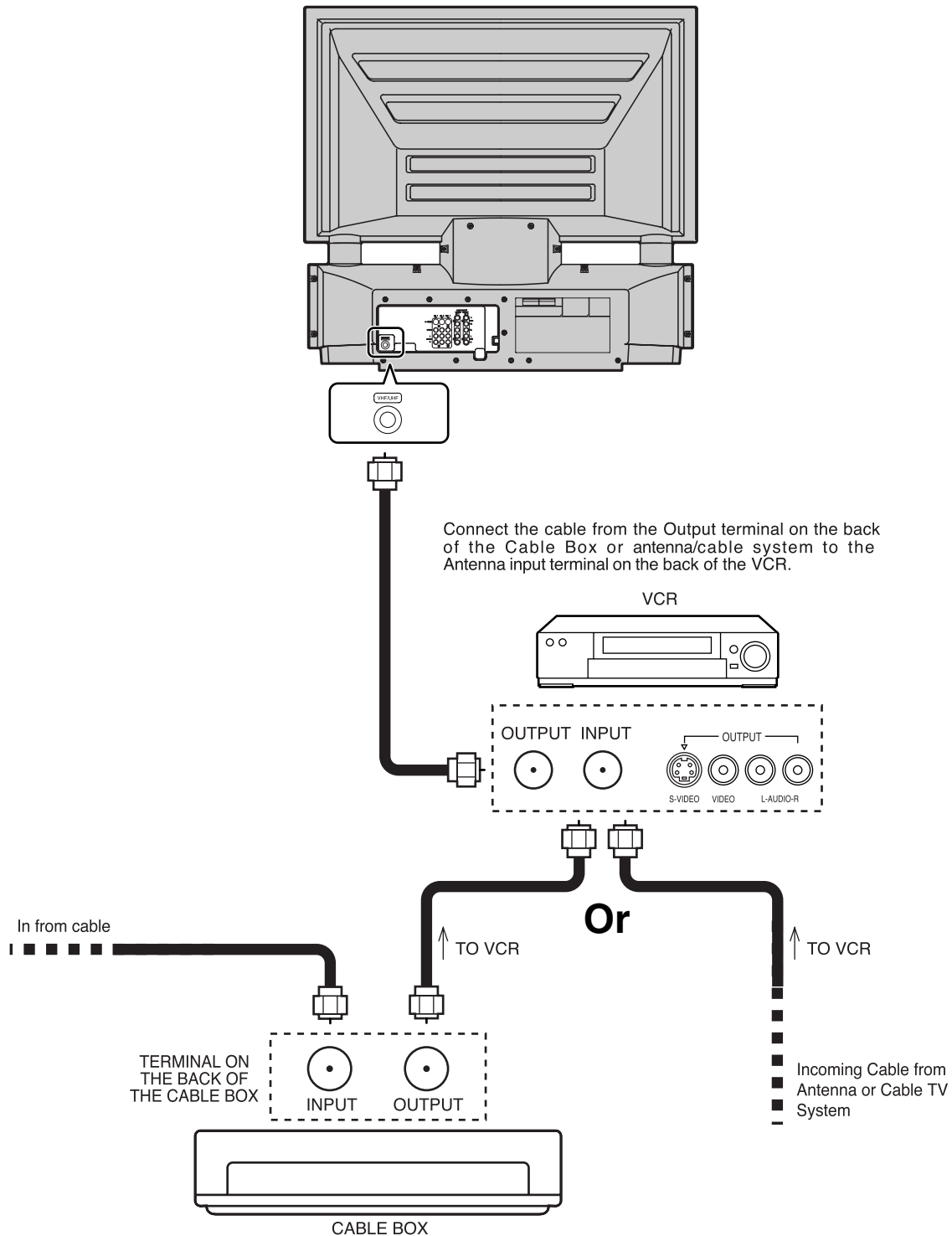
Notes:

- Certain cable systems offset some channels to reduce interference or have Premium (scrambled) channels. A cable converter box is required for proper reception. Check with your local Cable company for its compatibility requirements.
- For reception of cable channels (01 - 125) connect the cable supplied by your local cable company. Antenna Mode must be set to CABLE. (P. 24)

Installation

Connecting the Antenna / Cable to the RF in Terminal (VCR)

Use this configuration when connecting the projection display to a cable TV system using VCR.

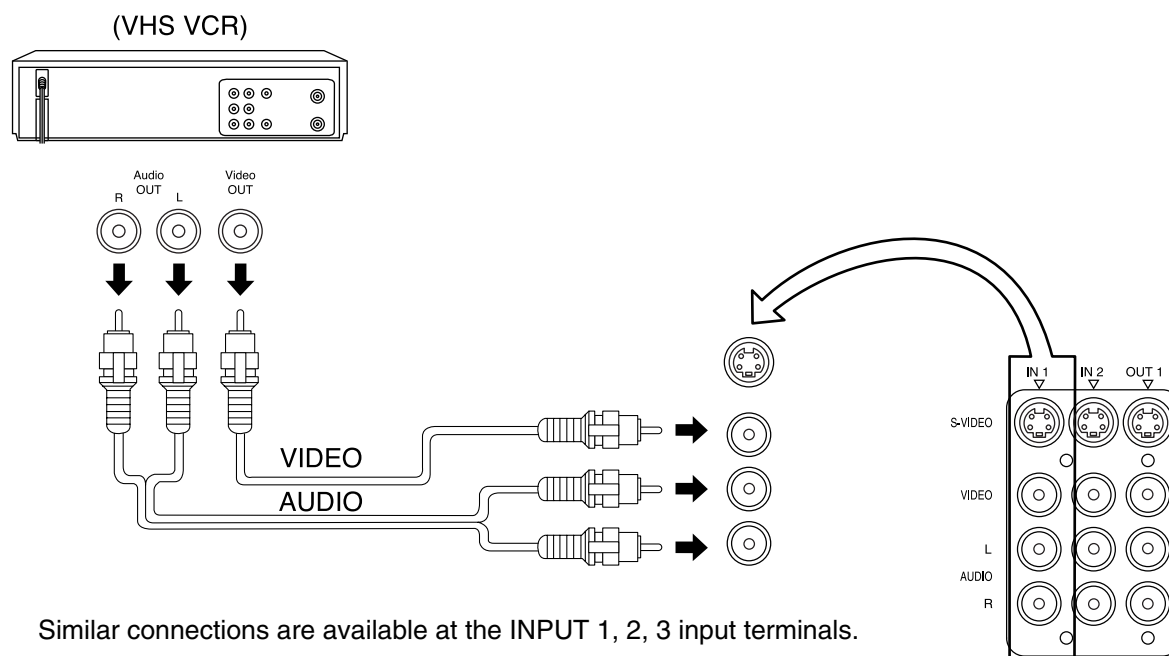
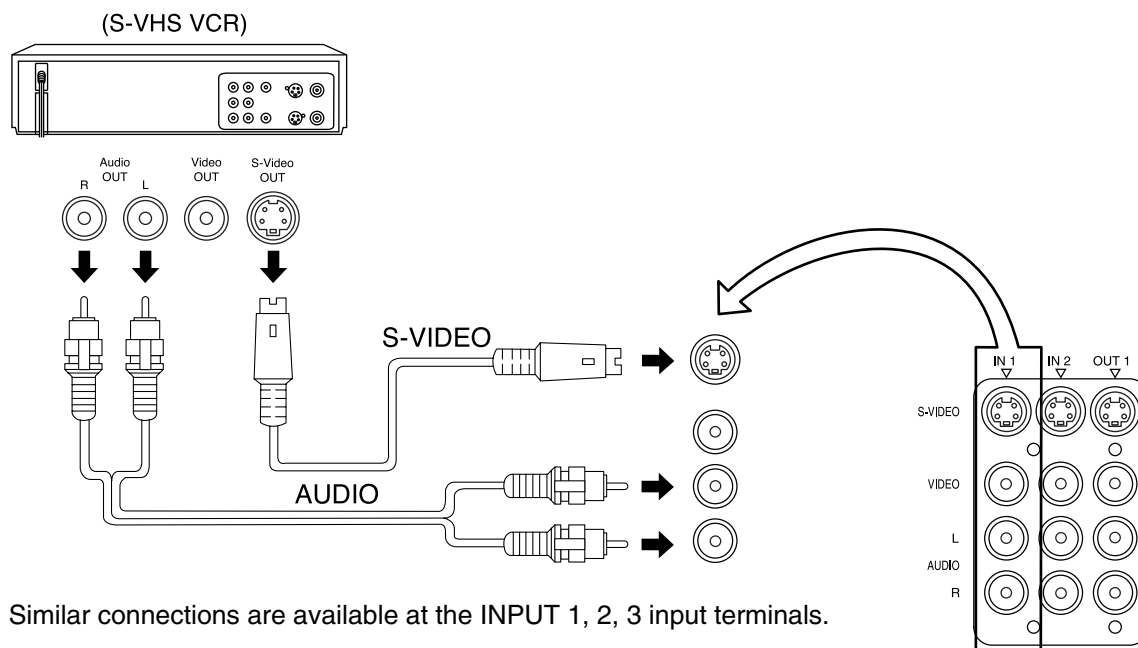


Notes:

- When the RF coaxial cable is connected to the projection display VHF/UHF terminal via a cable box or VCR, set the TV channel to CH3 or CH4. This does not apply when signal is input from VIDEO INPUT.

How to connect the “1, 2, 3” Input Terminals

Connects VCRs and other peripheral equipment



Notes:

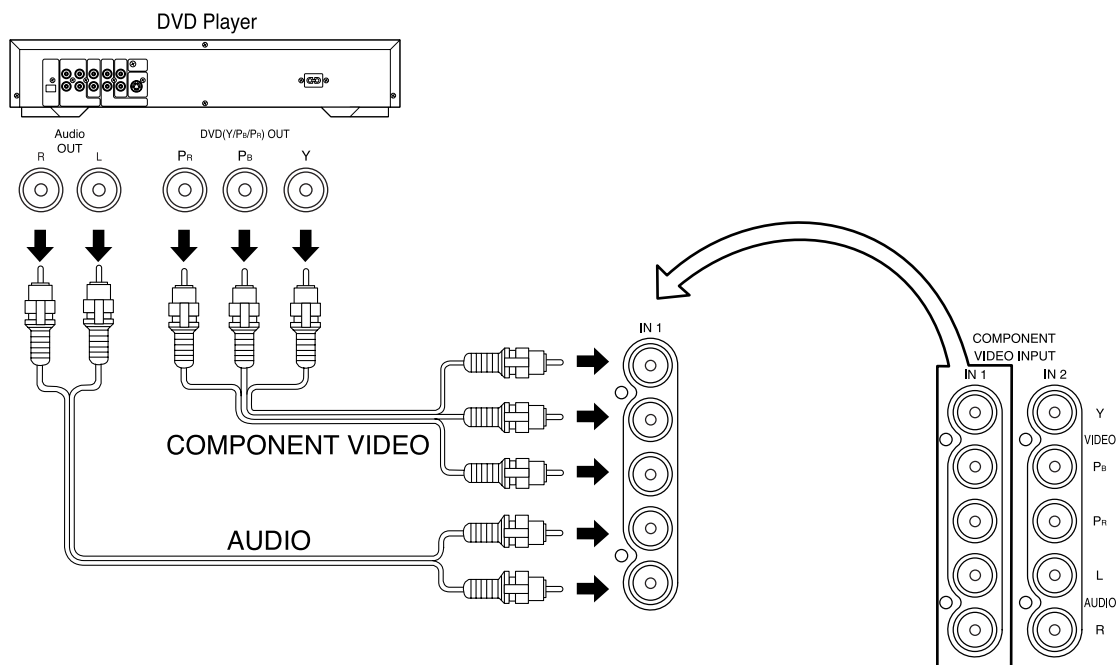
- Similar connections are available at the INPUT 1, 2, 3 input terminals.
- Input 3 is located on the front of the unit.
- Select the desired VIDEO input position by pressing the TV/VIDEO button. (P. 33)
- When connecting video cables, priority is given to the S-Video cable when the S-Video input terminal and the video input terminal are connected at the same time.

Installation

How to connect the COMPONENT VIDEO Input Terminals

Because each Y, PB, and PR signal is input independently, the Component signal allows for more accurate color reproduction.

The Component signal output terminal indication will differ according to the output device (Y, PB / Cb, PR / Cr). Please read the operating instructions included with the output device.

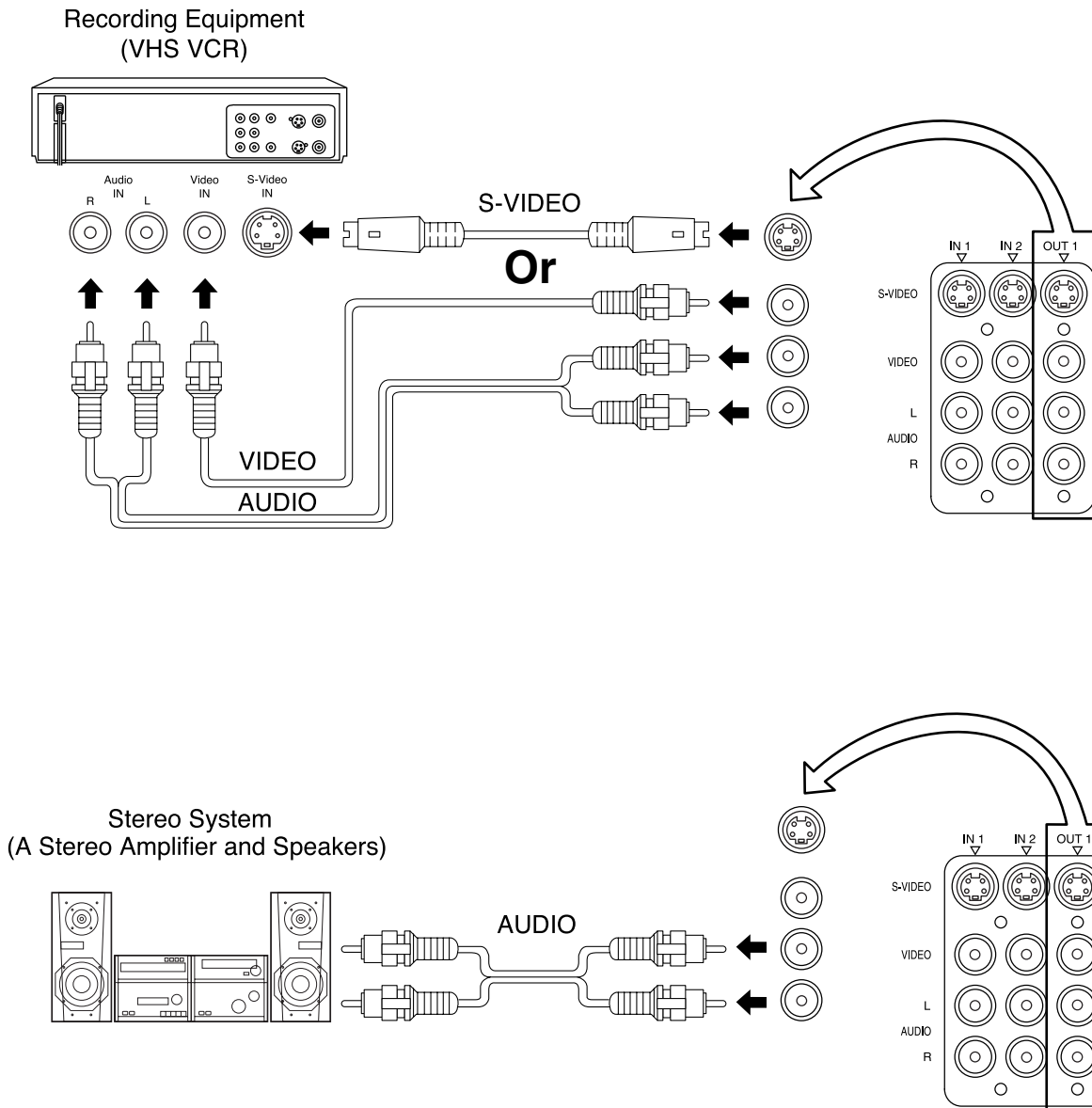


Notes:

- Similar connections are available at the COMPONENT VIDEO INPUT 1, 2 Terminals.
- Select the desired COMPONENT VIDEO INPUT position by pressing the TV/VIDEO button. (P. 33)
- Component video signals that can be input are 480i, 480p, 720p, and 1080i.

How to connect the AV Out Terminals

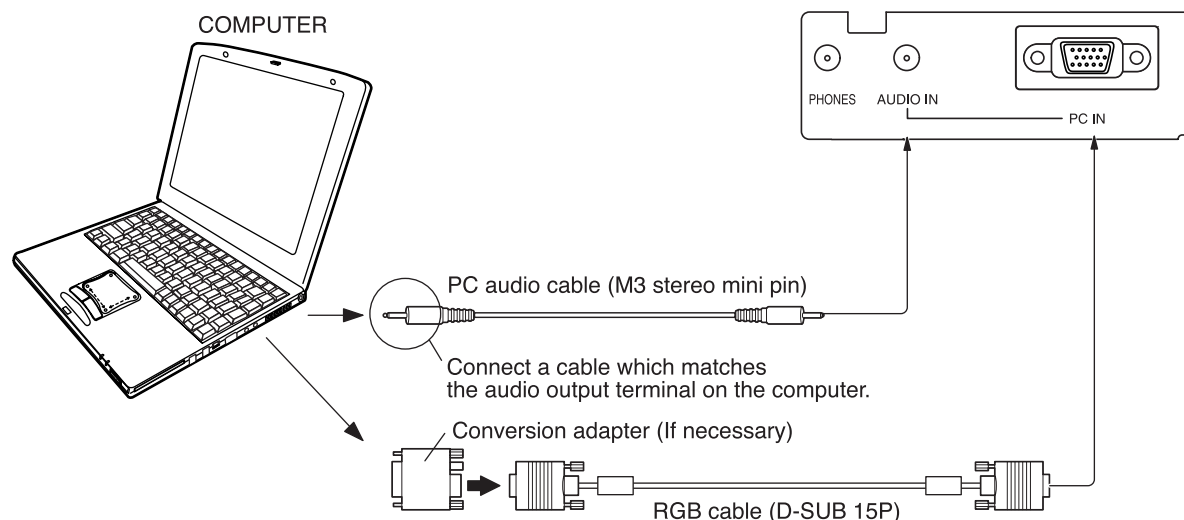
The “AV Out” Terminals output the same signals as the main picture on the projection display screen and sound from the speaker at that time, e.g. TV programs or signals from INPUT 1, 2, 3 terminals.



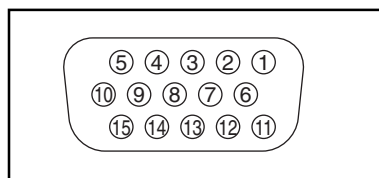
Notes:

- Never connect the VIDEO IN and OUT terminals to the same video recorder, as this could cause incorrect operation.
- Even if TV is in Split or PIP mode, OUT terminals only output the main picture and sound signals. A sub-picture, including channel search, etc., will not be output.
- VIDEO OUT terminals will not output Y, PB, PR, or RGB signals.
- The S-Video OUT terminal outputs the same signal that is input from the S-Video IN terminal.

How to connect the PC Input Terminals



Signal Names for D-SUB 15P Connector



Pin Layout for PC Input Terminal

Pin No.	Signal name
1	R
2	G
3	B
4	NC
5	NC
6	Ground for R
7	Ground for G
8	Ground for B

Pin No.	Signal name
9	NC
10	Ground
11	NC
12	NC
13	HD/CSYNC
14	VD
15	NC

NC: Not connected

Notes:

- Some PC models cannot be connected to the set. A conversion adapter is required to use the RGB cable (D-SUB 15P) to connect a Macintosh computer to the set. There is no need to use an adapter for computers with PC / AT compatible D-SUB 15P terminal.
- The computer shown in the illustration is for example purposes only. Additional equipment and cables shown are not supplied with this set.
- The picture will become dark if an RGB signal with a vertical scanning frequency of 62 Hz is input. To obtain the optimum picture quality with the projection display, a vertical scanning frequency of 60 Hz is recommended.
- Do not set the horizontal and vertical scanning frequencies for PC signals which are above or below the specified frequency range.
- Select the desired RGB input position by pressing the TV/VIDEO button. (P. 33)

Analog RGB signals that can be input

The table below lists the different types of analog RGB signals that can be input.

If a signal which differs greatly from any of the types listed below is input, the picture image may not be displayed correctly, or a black background may be displayed. At this time, "signal" will flash in the on-screen display for about 5 seconds.

Mode type		Signal data			Information menu display
		No. of dots (H x V)	Horizontal frequency (kHz)	Vertical frequency (Hz)	
Personal Computer Signals	VGA400 (70 Hz)	640 X 400	31.47	70.08	VGA400 70Hz
	VGA480 (60 Hz)	640 X 480	31.47	59.94	VGA 60Hz
	Macintosh 13"	640 X 480	35.00	66.67	MAC 13
	VESA400 (85 Hz)	640 X 400	37.86	85.08	VESA 85Hz
	VESA480 (72 Hz)	640 X 480	37.86	72.81	VGA 72Hz
	VESA480 (75 Hz)	640 X 480	37.50	75.00	VGA 75Hz
	VESA480 (85 Hz)	640 X 480	43.27	85.01	VGA 85Hz
	SVGA (56 Hz)	800 X 600	35.16	56.25	SVGA 56Hz
	SVGA (60 Hz)	800 X 600	37.88	60.32	SVGA 60Hz
	SVGA (72 Hz)	800 X 600	48.08	72.19	SVGA 72Hz
	SVGA (75 Hz)	800 X 600	46.88	75.00	SVGA 75Hz
	SVGA (85 Hz)	800 X 600	53.67	85.06	SVGA 85Hz
	Macintosh 16"	832 X 624	49.73	74.55	MAC 16
	* XGA (60 Hz)	1 024 X 768	48.36	60.00	XGA 60Hz
	* XGA (70 Hz)	1 024 X 768	56.48	70.07	XGA 70Hz
	* XGA (75 Hz)	1 024 X 768	60.02	75.03	XGA 75Hz
	* Macintosh 19"	1 024 X 768	60.24	74.93	MAC 19
	* XGA (85 Hz)	1 024 X 768	68.68	85.00	XGA 85Hz
DTV Format Signals	480 i	664 X 485	15.73	29.97	480 i
	480 p	720 X 483	31.47	59.94	480 p
	720 p	1 280 X 720	45.00	60.00	720 p
	*1080 i	1 920 X 1 080	33.75	30.00	1080 i

Notes:

- Input signals, other than those listed with a * mark, will give you a beautiful, stable picture.
- The front D-SUB15P connector can accept RGB(H-V sync separate) and RGB(sync on green). However, it is not guaranteed to display stable color when using RGB(sync on green).
- When used with an external video processor/scaler, it must have RGB(H-V sync separate) output.

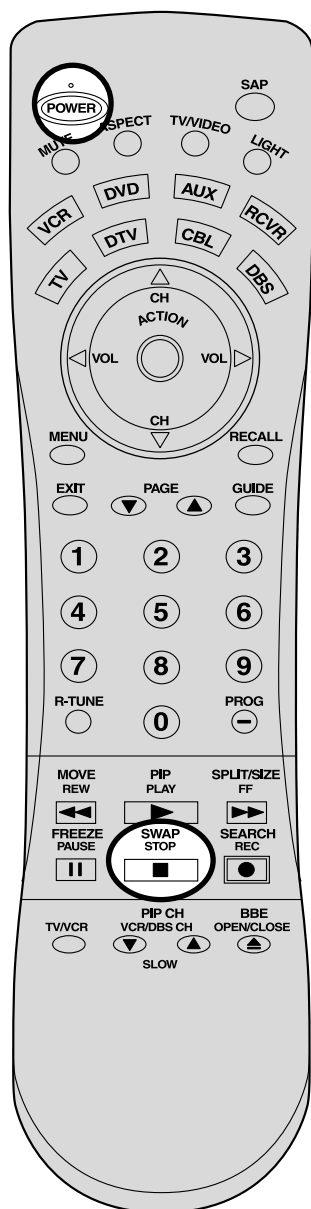
Power ON and OFF

Initial Setup

First, check the connection of the Plug to the Wall Outlet and the Antenna/Cable to the RF in Terminal.
(PP. 12-14.)

If using Cable Box, DSS Receiver, or VCR,

- Turn on Cable Box.
- Turn off DSS Receiver, or VCR.



1



Press the POWER button to turn the projection display on.
(Refer to page 21 for “Turning the Power ON and OFF”.)

Automatic Channel Setting is performed.

CH AUTO SET PROCEEDING

Note:

To cancel AUTO SET in progress, press the SWAP button.

Case 1

When setup is complete, the lowest channel picture appears.

Case 2

If setup is incomplete, the following screen appears. Check connection of Antenna/Cable to the RF in Terminal, then try Automatic Channel Setting again. (PP. 24, 25)

NO CH FOUND
PLEASE CHECK ANTENNA
CABLE CONNECTION THEN
PRESS ACTION KEY AGAIN

Note:

When the unit is turned on for the first time, Automatic Channel Setting is performed.

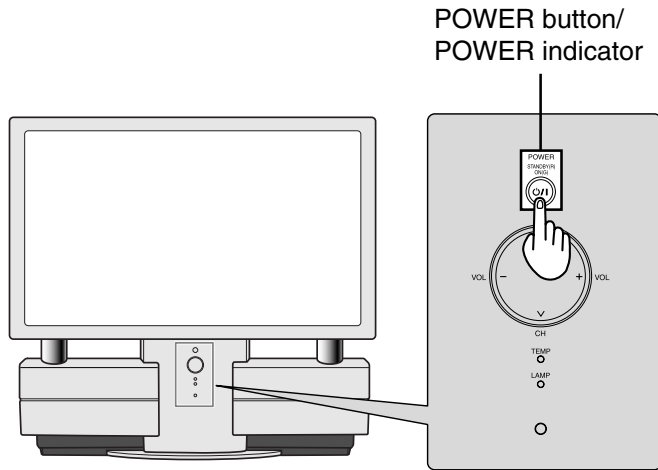
Turning the Power ON and OFF

Always be sure to follow the procedure given below to turn the projection display power ON and OFF.

- The lamp cooling fan will continue to operate for approximately 1 minute after the power is turned off. At the same time, the POWER indicator will blink Red.

Do not disconnect the power cord from the power outlet and do not open any circuit breakers while the cooling fan is still operating.

Do not disconnect the power cord from the power outlet while the power indicator blinks Red.



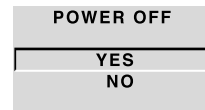
Power ON

Press the POWER button on the projection display or the remote control to turn the power on.

The Power Indicator will become Green and blink for approximately 10 seconds, and then turn solid Green.

Power OFF

Press the POWER button on the projection display or the remote control to turn the power off. Confirming message will appear.



Press the POWER button again.

If the POWER button is accidentally pressed, select NO with the ▲, ▼ buttons, then press the ACTION button.

The Power Indicator will become Red and blink for approximately 1 minute, and then turn solid Red.

Note:

When the AC Cord is unplugged, the internal cooling fan stops operating. In this case, the lamp will be insufficiently cooled and will take a while to turn ON again.

The Power Indicator

LED	ACTION
Red	Power – OFF (Standby mode)
Red blink	Power – OFF (Now cooling)
Green	Power – ON
Green blink	Power – ON (Preparing to light lamp)

Notes:

- If the POWER button is accidentally turned off during use, after power is turned back on, it may take a short period before the lamp automatically comes on.
- After the unit is turned on, maximum picture brightness will be achieved in 5-10 minutes. This is normal.

Flow Chart of Main menu

1

Pressing the ACTION button displays the MENU screen.

ACTION

Note:

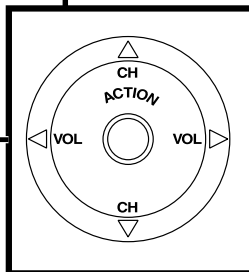
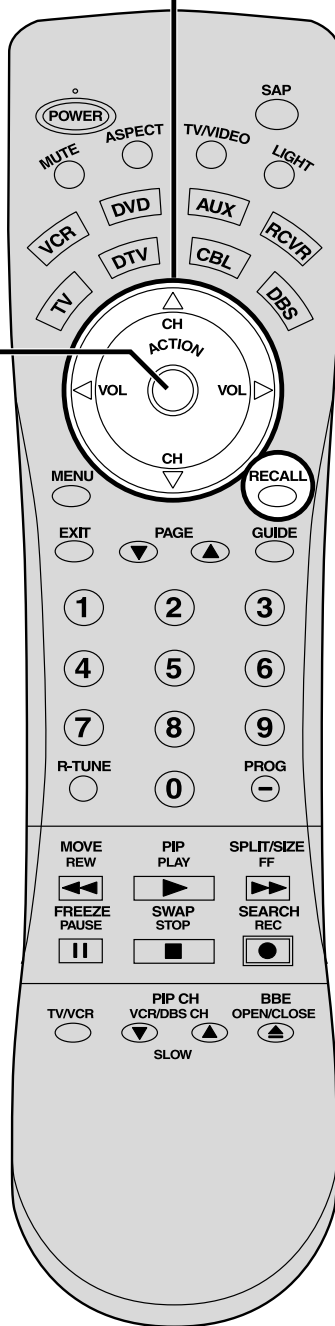
Depending on the signal being input, some items may or may not be adjustable and some functions may or may not be available.

2

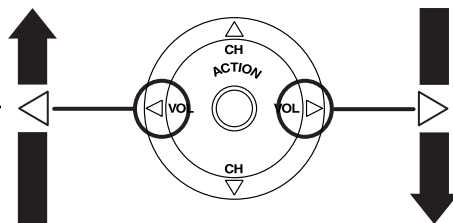
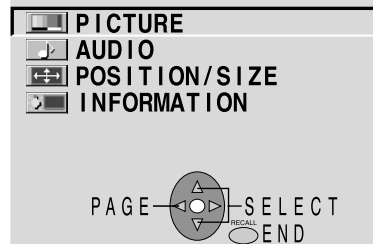
Select MENU desired by pushing Left “◀” button or Right “▶” button.

Use the ▲, ▼ buttons to select an item.

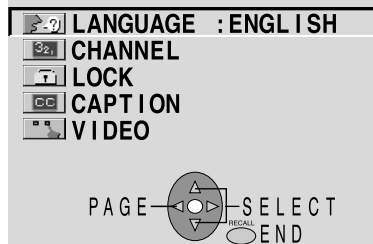
Use the ACTION button to set or go to next menu screen.



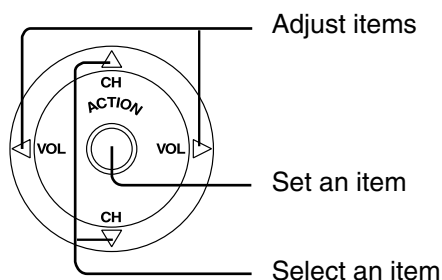
ADJUST | SET UP |



ADJUST | SET UP |



Flow Chart of Main menu



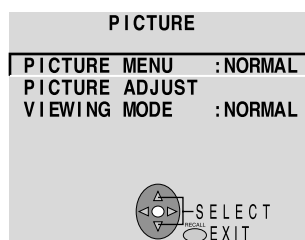
RECALL



Returning to the previous screen

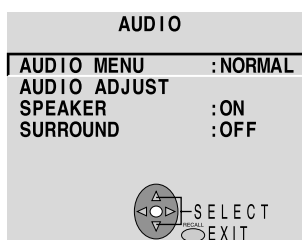
If you press the RECALL button while a menu screen is being displayed, the display will return to the previous screen.

TO PICTURE ADJUST menu



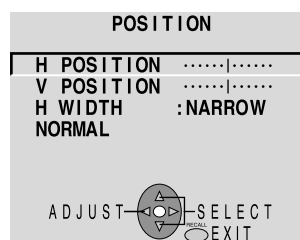
PP. 44, 45

TO AUDIO ADJUST menu



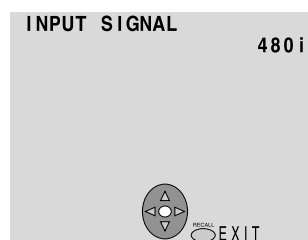
PP. 42, 43

TO POSITION/SIZE ADJUST menu



PP. 40, 41

INFORMATION screen



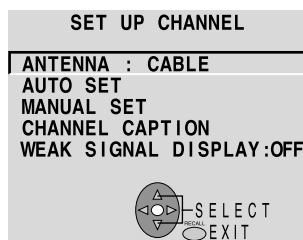
P. 57

TO LANGUAGE selection screen



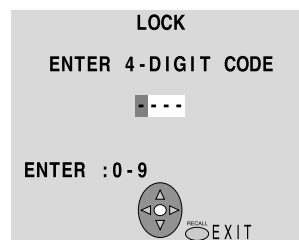
P. 57

TO CHANNEL menu



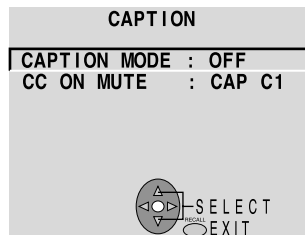
PP. 24-27, 52, 53

TO LOCK selection screen



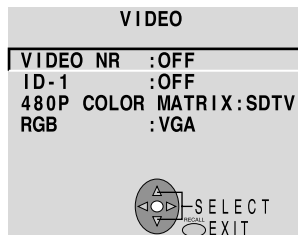
PP. 46-49

TO CAPTION menu



PP. 50, 51

TO VIDEO menu

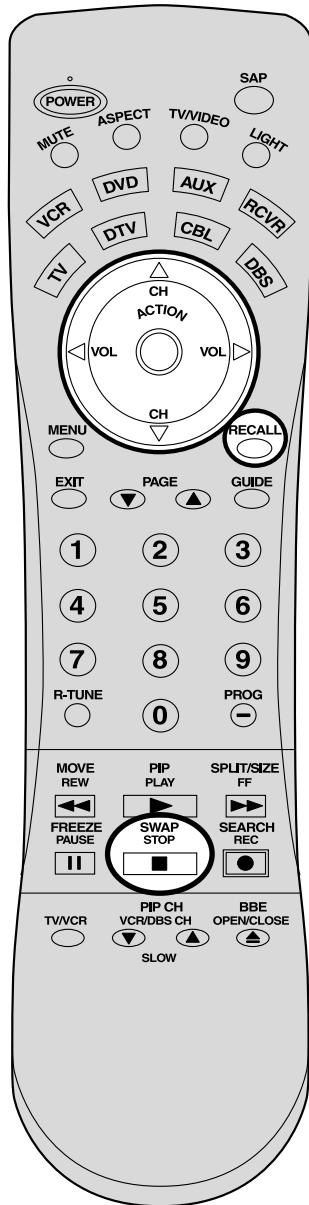


P. 54-56

Tuning channels

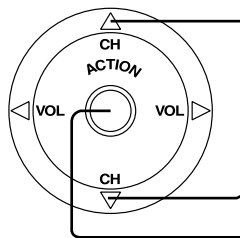
Automatic channel setting

Automatically searches and adds receivable channels to memory.



Press the ACTION button to display the MENU screen and select SET UP.

1

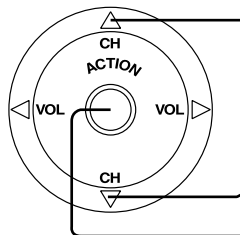


Press to select CHANNEL.

Press to display the CHANNEL.

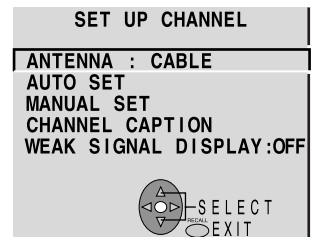


2

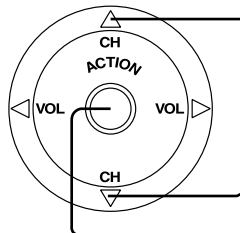


Press to select ANTENNA.

Press to select TV or CABLE.

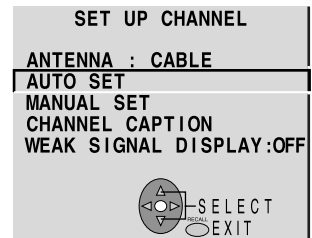


3



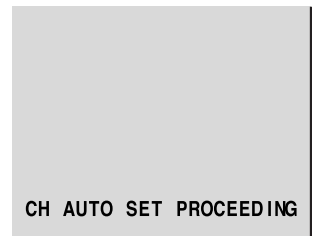
Press to select AUTO SET.

Press to run AUTO SET.



Note:

To cancel AUTO SET in progress, press the SWAP button.



Channels will automatically advance until all channels have been scanned. Channel numbers with a video signal present will be stored in the channel scan memory.

Continued on the next page.

Note:

TV or Cable Tuning mode must be set according to your connections.

4

Case 1

When setup is complete, the lowest channel picture appears.

Case 2

If setup is incomplete, the screen at right appears. Check connection of Antenna/Cable to the RF in Terminal, then try Automatic Channel Setting again.

NO CH FOUND
PLEASE CHECK ANTENNA
CABLE CONNECTION THEN
PRESS ACTION KEY AGAIN

5

RECALL



Press to exit menu.

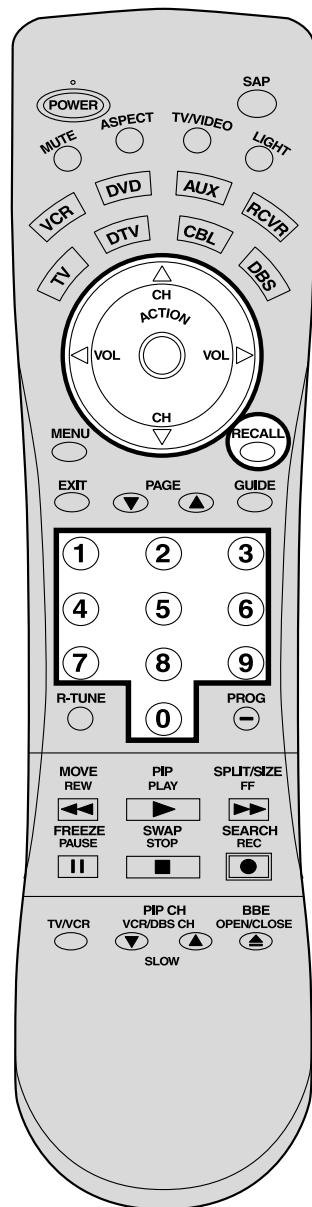
Notes:

- After AUTO SET is finished, the lowest channel number added will be received.
- Some channels with very weak signals may be locked into memory. If desired, these channels can be deleted manually using the MANUAL SET feature.

Tuning channels

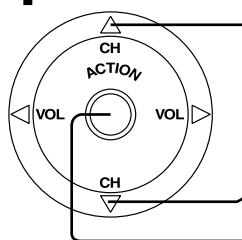
Manual channel setting

Use this setting when changing setting of receiving channels or changing the channel display.



Press the ACTION button to display the MENU screen and select SET UP.

1

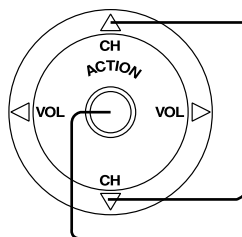


Press to select CHANNEL.

Press to display the CHANNEL.

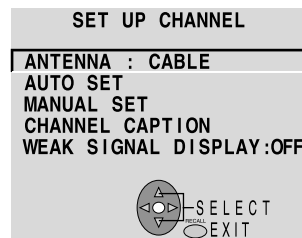


2

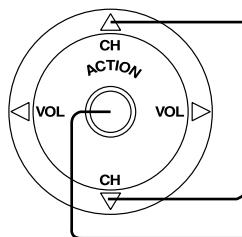


Press to select ANTENNA.

Press to select TV or CABLE.

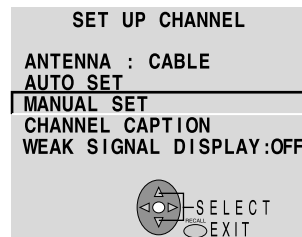


3



Press to select MANUAL SET.

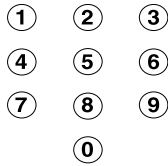
Press to display the MANUAL SET screen.



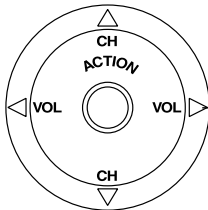
Continued on the next page.

4

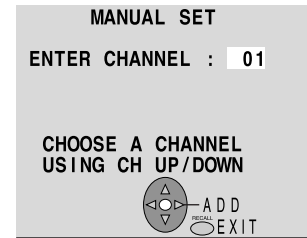
To add channel



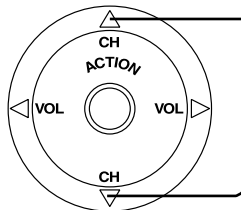
Press to select channel.



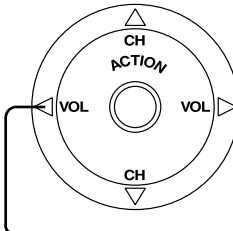
Press to add channels to memory.



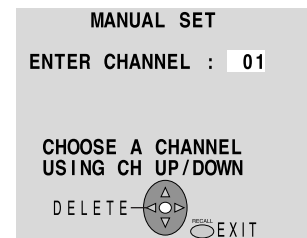
To delete channel



Press to select channel.



Press to delete channels from memory.



5

Repeat steps 4 to continue adding or deleting channels.

6

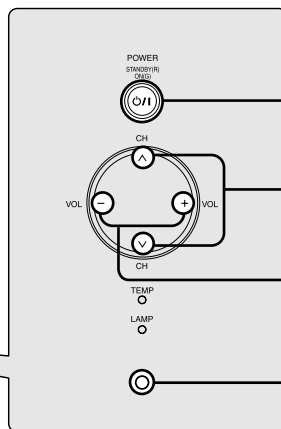
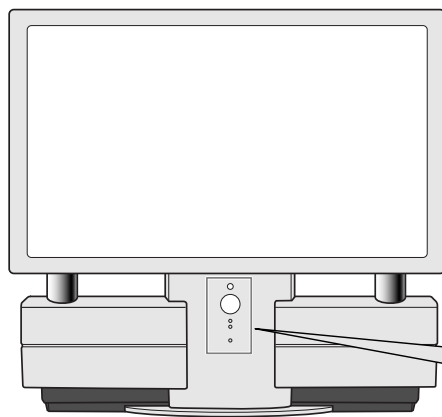


Press to exit menu.

Note:

Some channels with very weak signals may be locked into memory. If desired, these channels can be deleted manually using the MANUAL SET feature.

Projection display operation



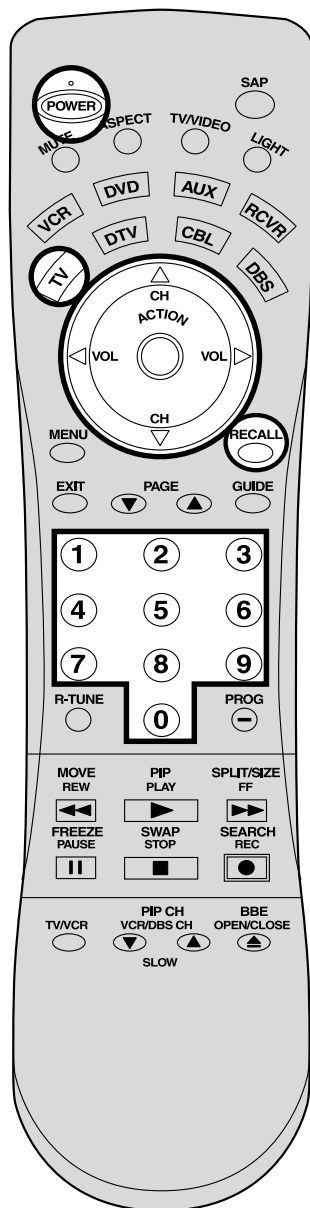
Operation can be done from the projection display.

POWER button/
POWER indicator

Channel up / down buttons

Volume up(+) / down(-) buttons

Remote Control Sensor



1



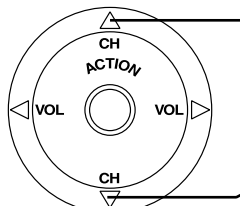
Press to operate the projection display with the remote control.

2



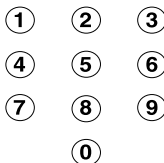
Press to turn the projection display on.

3

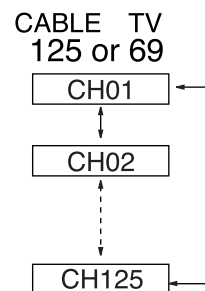


Press to select the desired channel. (or use number keys)

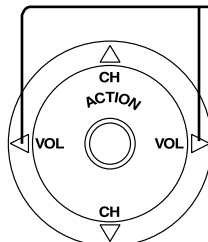
Or



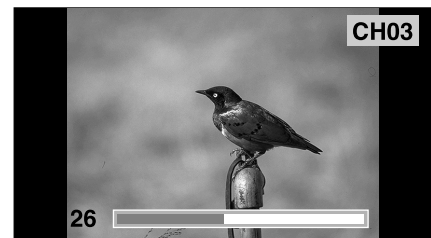
Note:
Refer to "Using the number keys" on the next page.



4



Press to select the desired volume level.



Notes:

- The channel number and volume level are stored even after the projection display is turned off.
- Power consumption can be reduced if the volume level is lowered.

TV status display

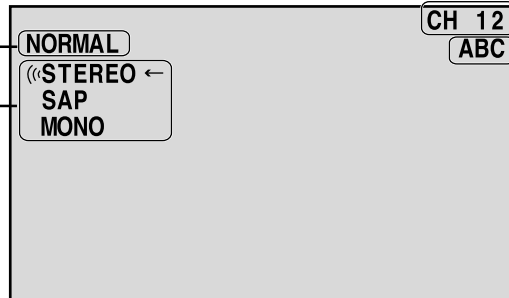
RECALL



Press the RECALL button, except when the MENU screen is displayed, to display current TV status information.

Aspect types
(P. 30)

Receivable
broadcast types
(P. 35)



Channel

Channel caption
(P. 52)

Using the number keys

- | | | |
|---|---|---|
| ① | ② | ③ |
| ④ | ⑤ | ⑥ |
| ⑦ | ⑧ | ⑨ |
| ⑩ | | |

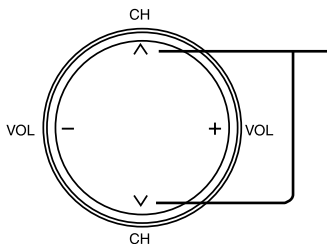
When selecting CABLE channels 100 to 125 with the number keys, first press the 1 key, and then enter the remaining two digits.

Example 1: To select channel 125, first press the 1 key, then 2, then 5.

Example 2: To select channel 12, press the 1 key, then 2. Channel 12 appears momentarily.

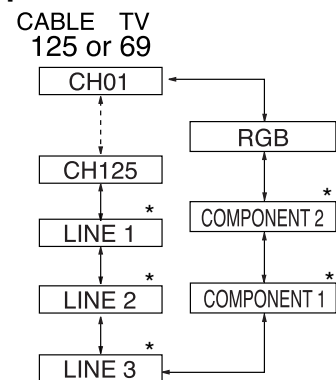
Example 3: To select channel 8, press the 8 key. Channel 8 appears momentarily.

Using projection display Channel up/down buttons to select input mode



Projection display Channel up/down buttons can also be used to select an outside input as shown right.

* No input mode is displayed for terminals with no equipment connected.

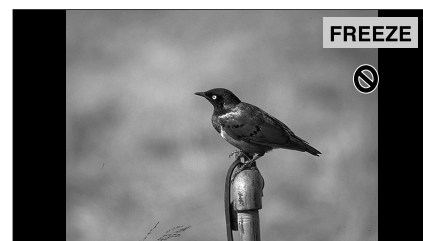


Auto shut off

To extend lamp life, if there is no signal to the set's tuner for 5 minutes, the lamp will shut off automatically.

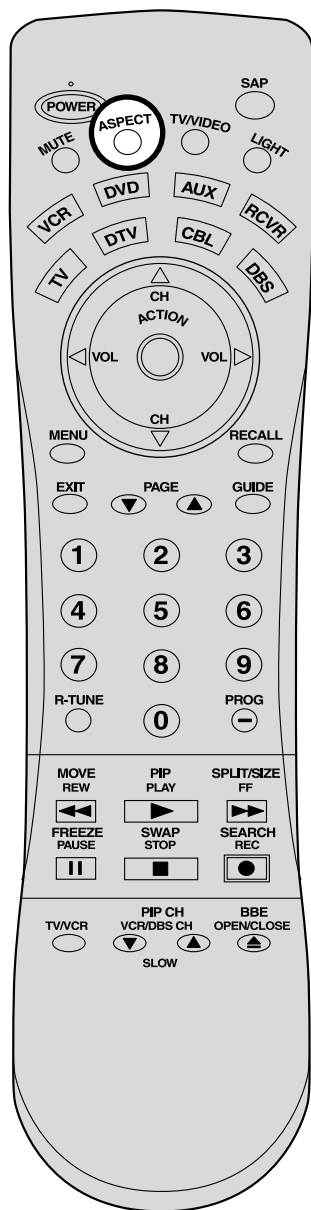
Invalid operation notice feature

If an invalid operation is attempted, the mark shown right is displayed.



ASPECT Controls

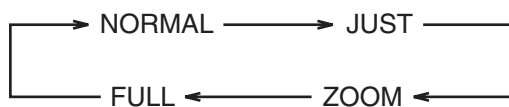
The color monitor will allow you to enjoy viewing the picture at its maximum size, including wide screen cinema format picture.



ASPECT



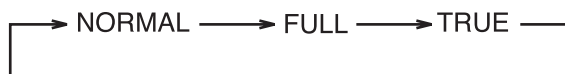
The aspect mode changes each time the ASPECT button is pressed.



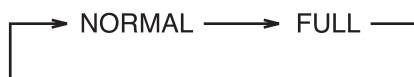
FULL

Notes:

- When a 480p signal is being received, the mode switches between NORMAL, ZOOM, and FULL only.
- When a 1080i and 720p signal is being received, the mode is set to FULL, and aspect switching is not possible.
- During PC input, the mode switches between NORMAL, TRUE and FULL only.

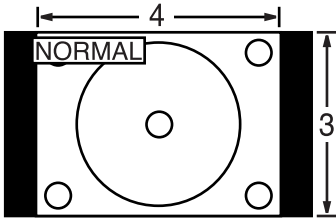
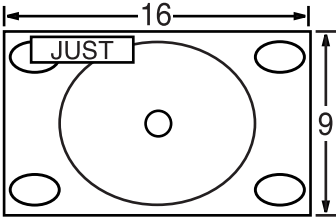
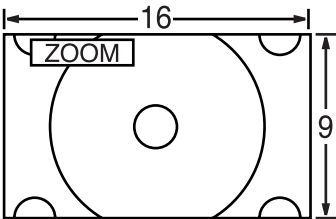
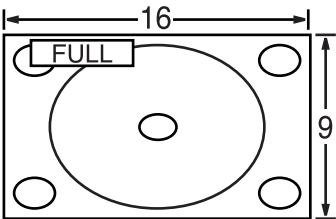
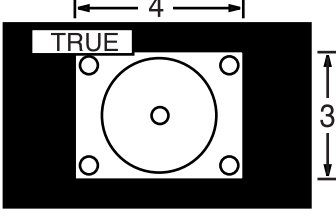


- When XGA and Mac 19 signal is input, the aspect will be NORMAL and FULL only.



Notes:

- However, if the mode selected does not match the aspect ratio of the input signal, the original picture quality may be affected.
- If using this Projection display in places, such as cafes or hotels, with the aim of displaying programs for a commercial purpose or for public presentation, please note that by using the aspect ratio (16:9) selection function to change the aspect ratio, you may be infringing on the rights of the original copyright owner of that program under copyright protection laws.
- If a normal (4:3) picture is projected in wide screen, distortion may occur around the edges so that part of the picture may no longer be visible. We recommend viewing in 4:3 mode so you can enjoy the picture as it was intended to be seen.

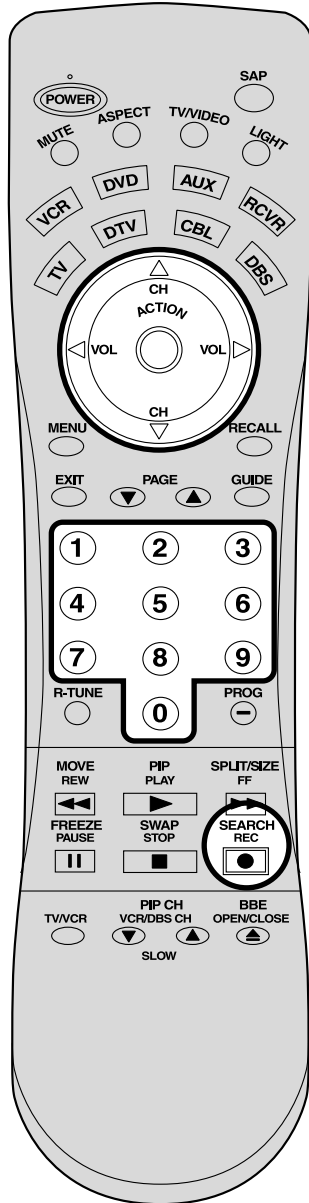
Mode	Picture	Explanation
NORMAL		NORMAL will display a 4:3 picture at its standard 4:3 size.
JUST		JUST mode will display a 4:3 picture at maximum size but with aspect correction applied to the center of the screen so that elongation is only apparent at the left and right edges of the screen. The size of the picture will depend on the original signal.
ZOOM		ZOOM mode magnifies the central section of the picture.
FULL		FULL will display the picture at its maximum size but with slight elongation.
TRUE		You can reduce the image and adjust it to the original image quality. (Except XGA)

Notes:

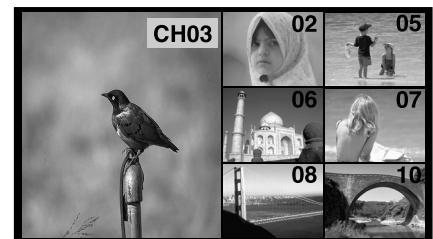
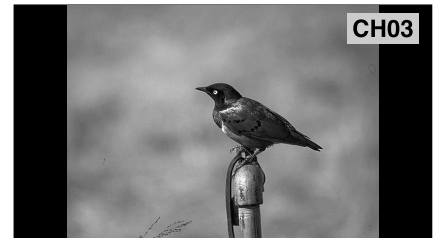
- The screen size changes if ID-1 is detected. (P. 55)

Searching for the desired channel (Channel search)

Channel search displays each channel, in order, as a paused image. Channels are displayed from the left top to the right bottom in order. When it reaches the right bottom, the next channel is displayed at the left top, overwriting the previously displayed channel.



When the SEARCH/REC button is pressed during single screen.



Or



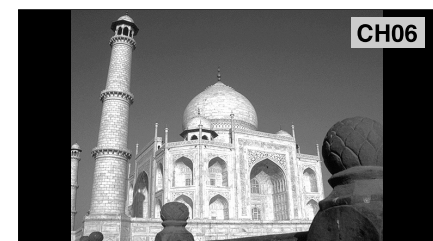
(PC input)

When a channel button is pressed during channel search.

- Number keys:
Example: When 6 is pressed, channel 6 is displayed in single screen.
- Channel up and down buttons:
When ▲ or ▼ button is pressed, the next channel up or down is displayed in single screen.

Ex. Select channel 6

Sound from the left screen is output from the speakers on the projection display set.



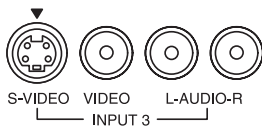
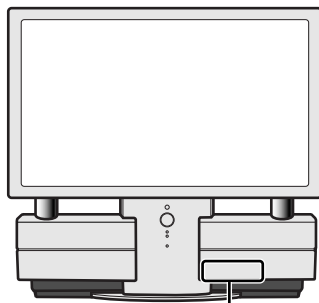
Notes:

- To end channel search, press SEARCH/REC.
- While using the PIP feature, Channel search is not available.

Playing peripheral equipment

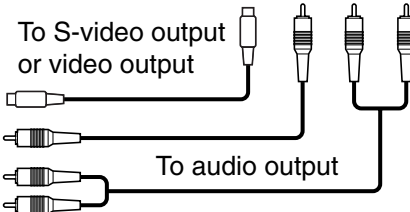
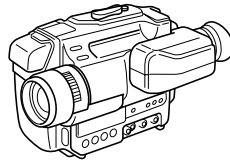
Confirming connections

A video camera uses the Input 3 terminal on the front of the projection display.

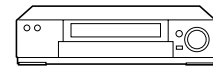


Example: Connect Input 3

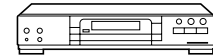
Video camera



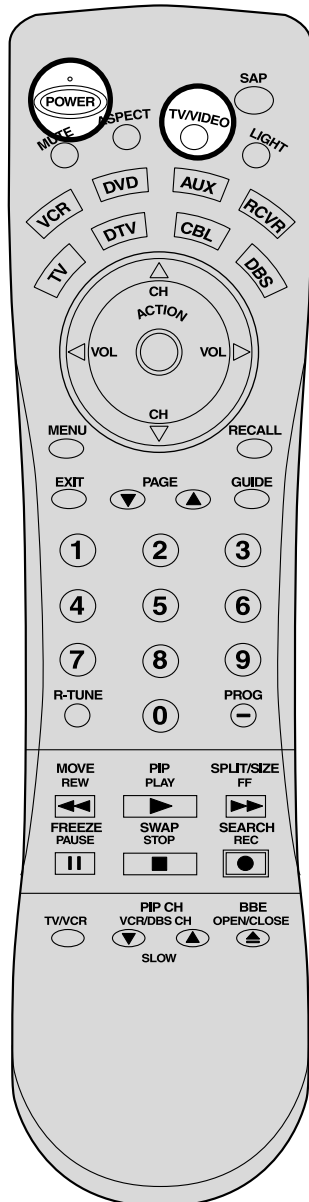
VCR



DVD player



This equipment can also be connected to the rear terminals. See Connections for details.



Turning the power on and switching input modes

1



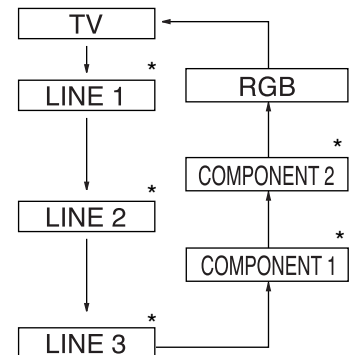
Turn the projection display on.

2



The input mode changes each time this button is pressed.

* No input mode is displayed for terminals with no equipment connected.



LINE 1:

Signal of source connected to INPUT 1 is displayed.

LINE 2:

Signal of source connected to INPUT 2 is displayed.

LINE 3:

Signal of source connected to INPUT 3 is displayed.

COMPONENT 1:

Signal of source connected to COMPONENT VIDEO INPUT 1 is displayed.

COMPONENT 2:

Signal of source connected to COMPONENT VIDEO INPUT 2 is displayed.

RGB:

Signal of source connected to PC IN is displayed.

3

Operate the connected equipment.

Mute / Freeze / SAP



Sound mute



Useful when answering the phone or receiving unexpected visitors

Press this button to mute the sound. Press again to reactivate sound. Sound is also reactivated when power is turned off or volume level is changed.



Note:

The audio output from AV OUT is not muted.

Freezing pictures

FREEZE
PAUSE



Projection can be switched between a frozen (still) picture and a moving picture each time the FREEZE button on the remote control unit is pressed. Press FREEZE button again to resume motion.



Note:

The video output from AV OUT is not frozen.

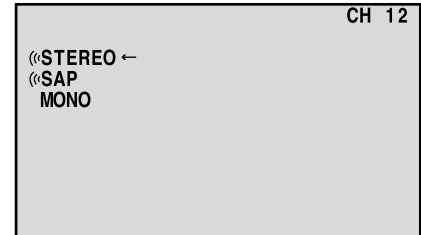
Receivable Broadcast Types

The following are possible broadcast types with their accompanying on-screen displays. The signal being received is indicated with a “◀” mark while the selected audio mode is indicated with an arrow. To change the audio mode for these broadcasts, follow the “Select Audio Mode for TV Viewing” section (below.)

MTS Stereo and SAP broadcast

Multi-channel Television Sound Stereo (main language) and Secondary Audio Program (sub language) broadcasts are both being received simultaneously.

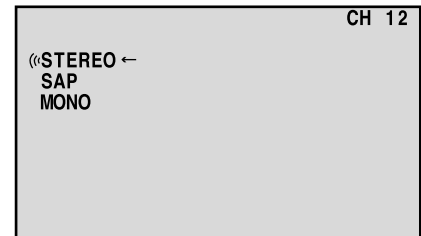
Select the STEREO or SAP audio mode.



MTS Stereo broadcast

Multi-channel Television Sound Stereo broadcast. Select STEREO audio mode.

- If stereo broadcast is weak and the display flickers, select MONO audio mode for possibly better results.



SAP broadcast

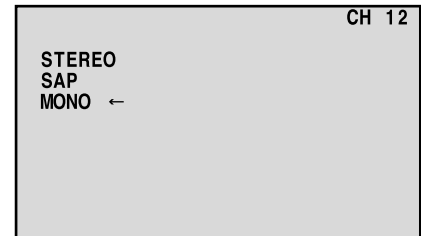
Secondary Audio Program (sub language.)

Select SAP audio mode for the sub language.



MONO broadcast

Normal monaural sound broadcast.



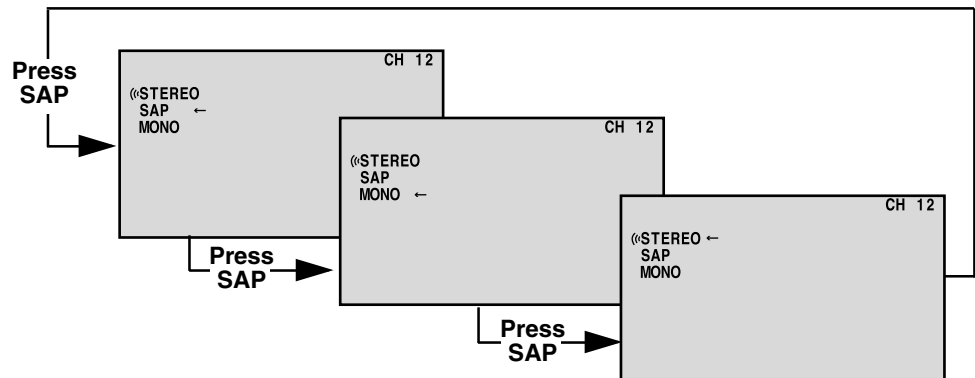
Select Audio Mode for TV Viewing



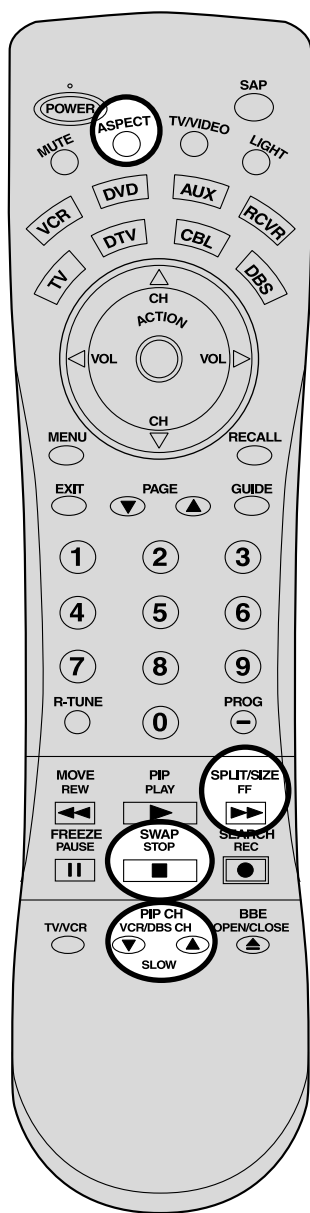
Press SAP button to select the desired audio mode as described below.
(Arrow shows selection.)

- Each press of SAP button will change the audio mode as shown below.
- “SAP” is selected with first press of SAP button.

< Example >



Split screen



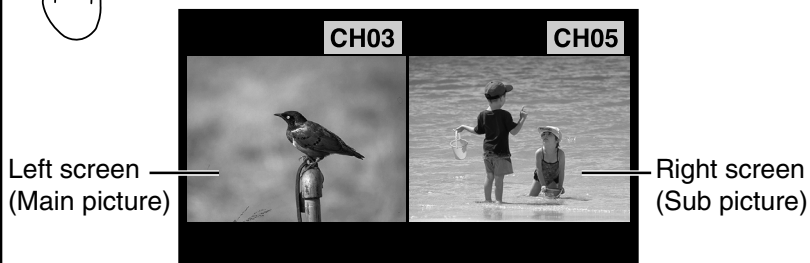
Notes:

- Sound from the Left screen is output from the speakers on the projection display set.
- When the screen is split, signals of the Left screen are output from the rear monitor output terminal.
- The left and right screens are processed by individual circuits and, therefore, may slightly vary in image quality.
- Split screen returns to single screen when the projection display is turned off.
- With the Left screen, as with a single screen, you can change the input, change channels, and adjust the volume.
- The right and left screens cannot display the same picture at the same time.
- A split screen which includes an RGB signal from a PC is fixed as SPLIT SCREEN NORMAL (PC input).

Splitting the screen



Press to split.
(The previously selected screen appears on the left.)



- Returning to one screen.

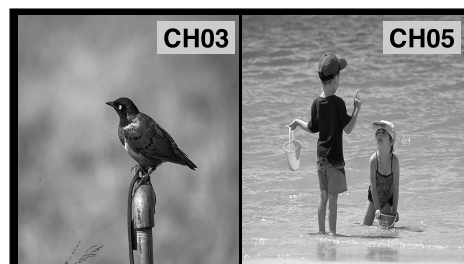


Press to return.

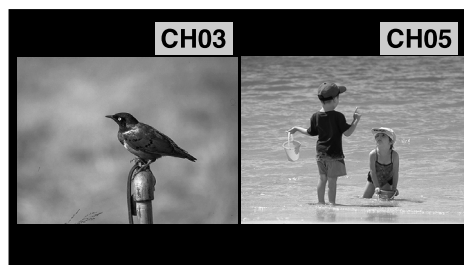
Selecting the screen mode for split screen.



Press to select modes.



SPLIT SCREEN FULL



SPLIT SCREEN NORMAL



SPLIT SCREEN NORMAL
(PC input)

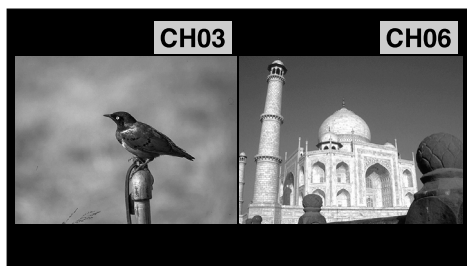
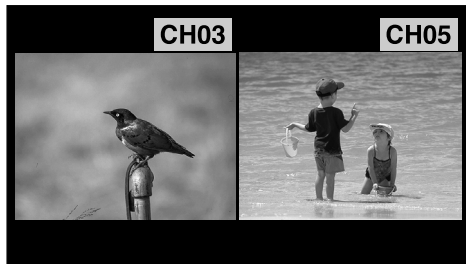
Changing the channel of the right screen

1

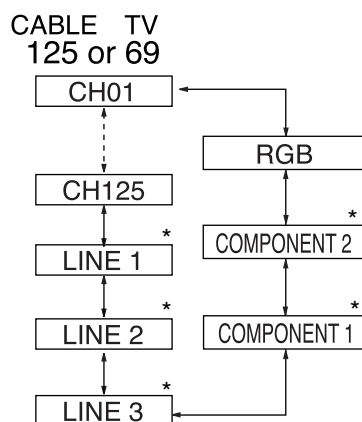


Press to select the desired channel.

Example:
During SPLIT SCREEN NORMAL.



PIP ▲, ▼ buttons can also be used to select an outside input for the right side of the screen.

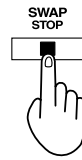


* No input mode is displayed for terminals with no equipment connected.

Note:

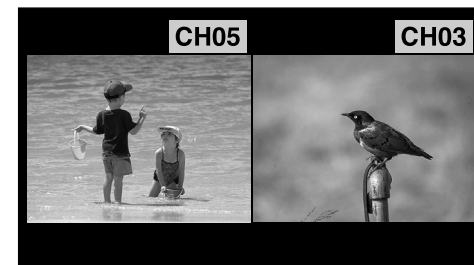
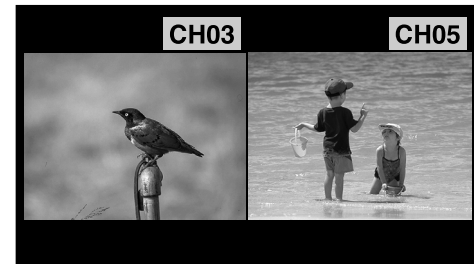
When outside input is finished, the lowest registered channel number is displayed. For faster selection, press the SWAP button to change the screen to the left. Then, press the TV/VIDEO button to directly change the input. Finally, press SWAP button again to change the screen back to the right.

Swapping left and right screens



Press to swap.

Example:
During SPLIT SCREEN NORMAL.



Example:
During SPLIT SCREEN NORMAL
(PC input)

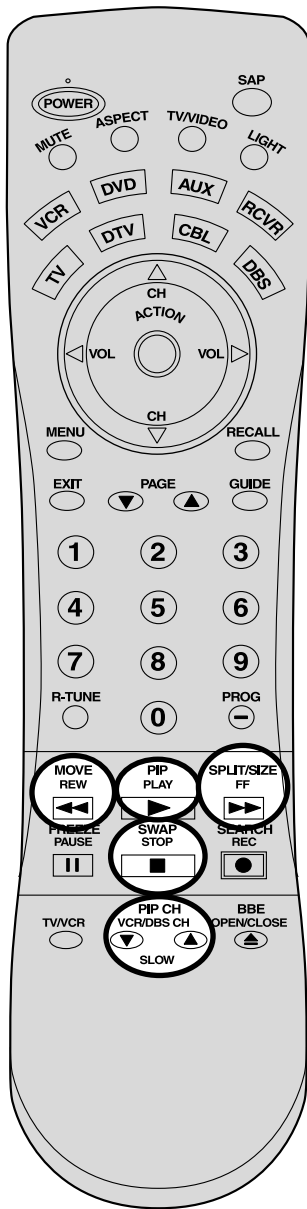


Note:

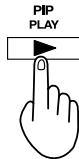
Picture quality may change according to the combination of signals input to the left and right screens.

Picture in Picture (PIP) Screen

You can view two pictures simultaneously using two tuners and picture in picture (PIP) display function.



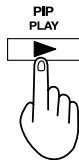
Display PIP screen



Press to split
(The previously selected screen appears on the Main.)



- Returning to one screen.



Press to return.

Notes:

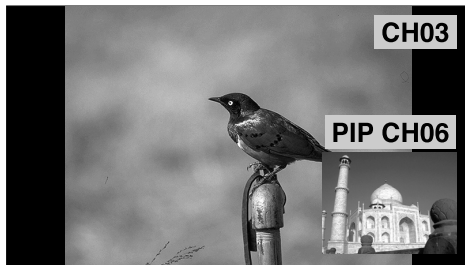
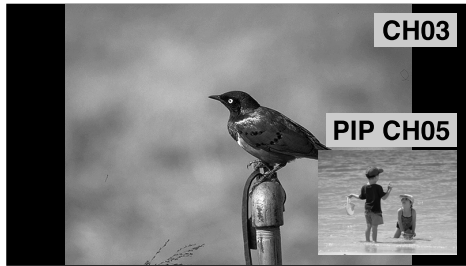
- Sound from the Main screen is output from the speakers on the projection display set.
- In PIP mode, the Main screen signal is output from the rear monitor output terminal.
- Because Main and PIP screens are processed by individual circuits, image quality may vary slightly.
- PIP mode returns to single screen when the projection display is turned off.
- The Main and PIP screens cannot display the same picture at the same time.
- An RGB signal cannot be displayed on a PIP screen or a Main screen.
- A component signal cannot be displayed on a PIP screen. Thus, when a component signal is displayed on the Main screen, the SWAP button becomes invalid.
- With the Main screen, as with a single screen, you can change the input, change channels, and adjust the volume.

Changing the channel of the PIP screen



Press to select the desired channel.

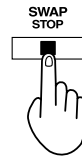
Example:
During Main screen NORMAL.



Note:

PIP ▲, ▼ buttons can also be used to select an outside input for the PIP screen.

Swapping Main and PIP screens



Press to swap.

Example:
During Main screen NORMAL.

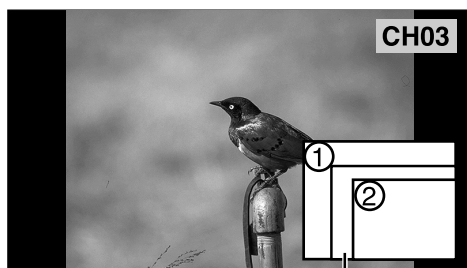
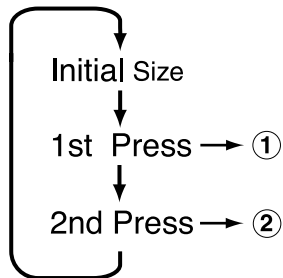


Selecting the screen size for PIP screen

You can choose PIP screen size of 3 magnifications.



Press repeatedly to select PIP screen size.



Initial size

Note:

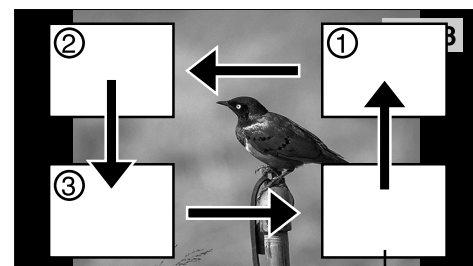
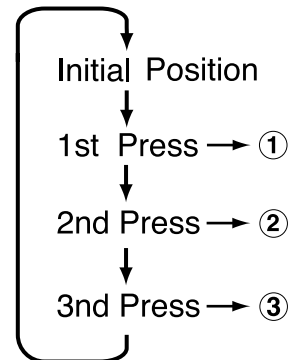
The last size chosen is saved and will not be erased even if the power is turned off.

Move PIP screen

You can move the PIP screen to four positions.



Press repeatedly to select PIP position.

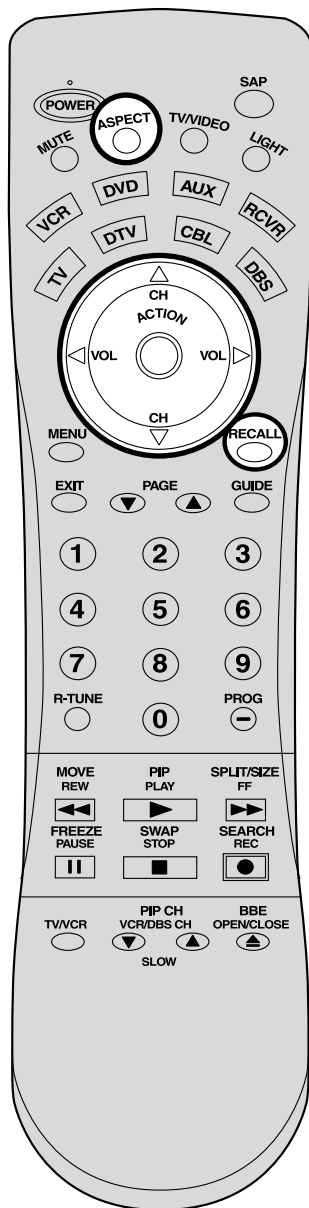


Initial position

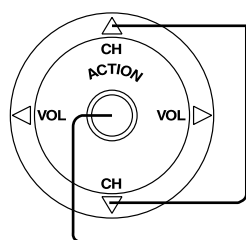
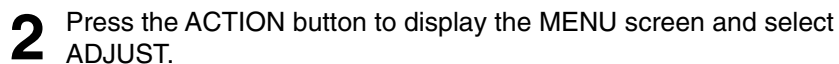
Note:

The last position chosen is saved and will not be erased even if the power is turned off.

Adjusting screen position and size

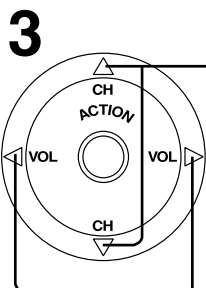
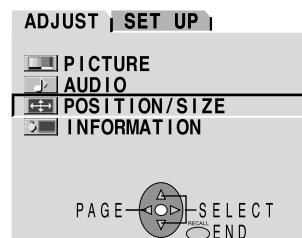


Press to select the screen mode.



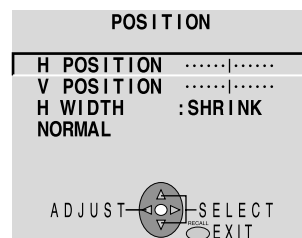
Press to select POSITION/SIZE.

Press to display POSITION/SIZE.



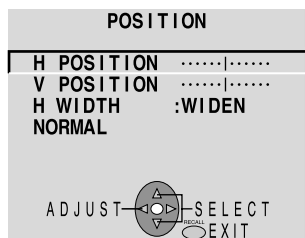
Press to select the menu to set each item.

Press to adjust POSITION/SIZE.

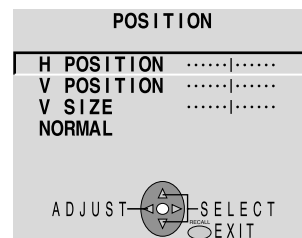


NORMAL is displayed at default.

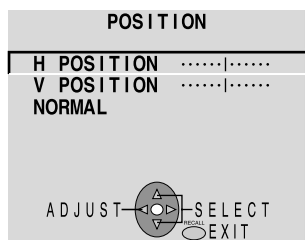
JUST mode



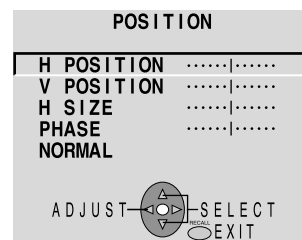
NORMAL mode



ZOOM mode



FULL mode

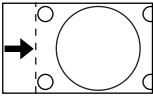
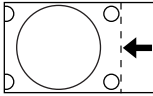
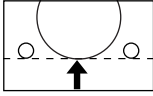
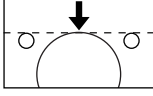
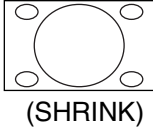
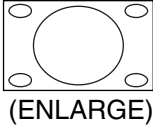
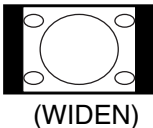

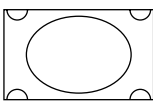
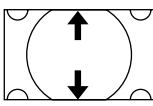
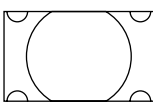
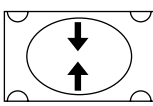
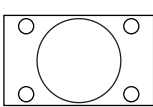
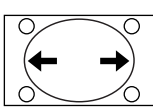
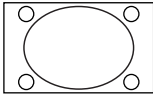
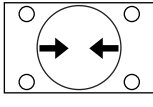


PC input



Press to exit menu.

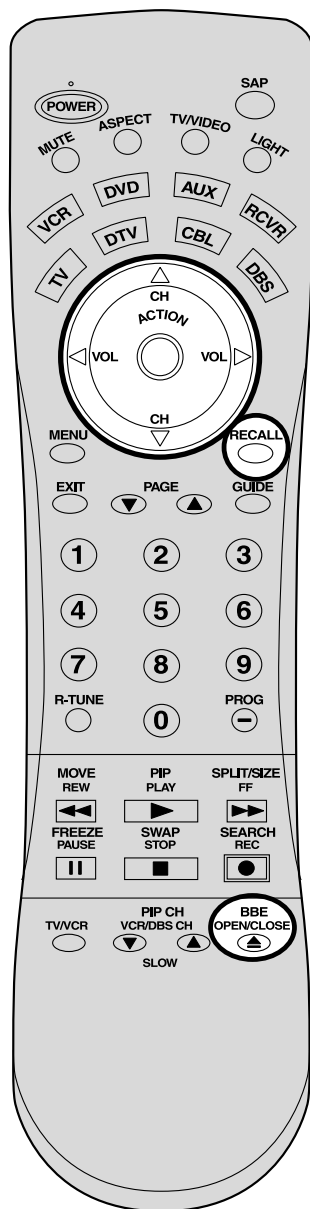
Adjusting screen position and size

Adjustment item	Button	Adjustment Details	Note
H Position	Press ► button.	The image moves to the right. 	
	Press ◀ button.	The image moves to the left. 	
V Position	Press ► button.	The image moves up. 	
	Press ◀ button.	The image moves down. 	
H WIDTH	Press ACTION button.	If noise appears on the ends of the image in SHRINK, switch to ENLARGE.  (SHRINK)  (ENLARGE)	Only JUST mode
		If noise appears on the ends of the image in WIDEN, switch to NARROW.  (WIDEN)  (NARROW)	Only NORMAL mode (Except PC input)
V SIZE	Press ► button.	Press to enlarge image vertically  	Only ZOOM mode
	Press ◀ button.	Press to shrink image vertically  	
H SIZE	Press ► button.	Press to enlarge image horizontally  	PC input
	Press ◀ button.	Press to shrink image horizontally  	
PHASE	Press ► button. Press ◀ button.	Adjust in order to remove any picture interference or contour blurring which may occur in computer images.	PC input

Notes:

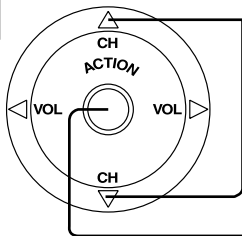
- This projection display is equipped with various screen modes. If a screen mode with a different aspect from the broadcast program is selected, image will appear differently. Select the proper screen mode with this in mind.
- Be careful when using this projection display for commercial purposes or for public use, such as in cafes and hotels.
- Shrinking and enlarging images by using screen mode switching function (zoom, etc.) may violate copyright laws.
- Images displayed on a wide screen TV will be cut off or distorted at the edges, when viewing normal aspect images of 4:3 in ZOOM, JUST or FULL mode. Display in NORMAL mode to view the original image intended by the producer.
- For 1080i and 720p input images, screen size cannot be adjusted.
- The adjusted setting will be kept even when the projection display is turned off.
- The signals output from the monitor output terminal on the back of the projection display is not affected when the screen size and position is adjusted.

Audio Adjustments



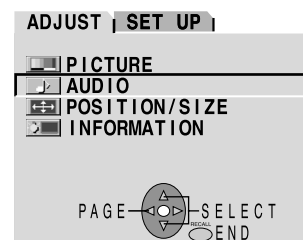
Press the ACTION button to display the MENU screen and select ADJUST.

1

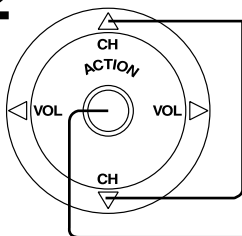


Press to select AUDIO.

Press to display AUDIO screen.

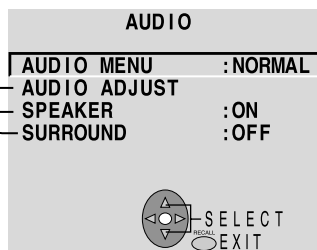
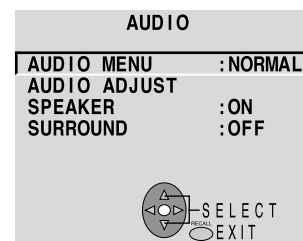


2



Press to select the menu to set each item.

Press to set each item.



You can hear deeper, 3D audio using just the unit's two front speakers. Surround sound effect is not available for normal (mono) broadcasts.

You can turn off the unit speaker when it is connected to external audio equipment.

See next page

NORMAL

Emits the original sound. (Factory setting)

AUTO

The sound level is automatically adjusted to suit the program source.

CINEMA

Sound suited to movies.

MUSIC

Sound suited to music.

SPEECH

Sound suited to dialogue.

3

RECALL

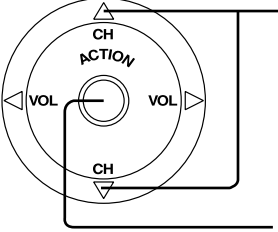


Press to exit menu.

Notes:

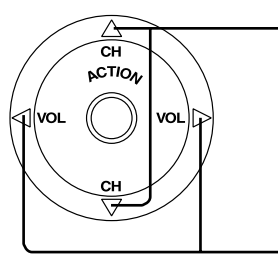
- Sound signals are output from the rear AUDIO OUT terminal.
- When volume is adjusted or the mute button is pressed from the remote control, a message will be displayed.

1 Repeat step 1 on page 42.

2  Press to select AUDIO ADJUST

Press to display AUDIO ADJUST screen.

AUDIO	
AUDIO MENU	: NORMAL
AUDIO ADJUST	
SPEAKER	: ON
SURROUND	: OFF

3  Press to select the menu to set each item.

Adjust the desired level by listening to the sound.

AUDIO ADJUST	
BASS
TREBLE
BALANCE
NORMAL	


AUDIO ADJUST	
BASS
TREBLE
BALANCE
NORMAL	

NORMAL is displayed at default.

BASS
Adjusts low sounds

TREBLE
Adjusts high sounds

BALANCE
Adjusts left and right volumes

4  **RECALL**

Press to exit menu.

Using BBE



Press this button to turn the BBE sound feature On or Off.

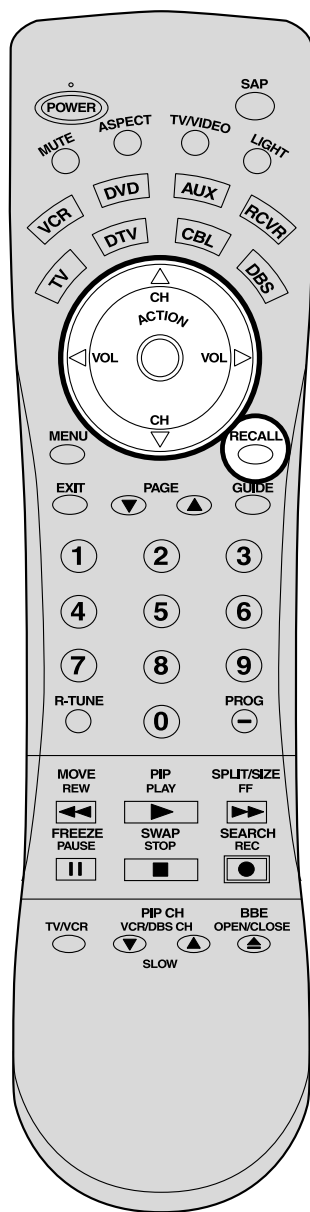
BBE sound technology enhances speech intelligibility and restores the dynamic range of musical passages to provide outstanding natural sound.

Note:
If BBE is ON, SURROUND cannot be selected.

AUDIO	
AUDIO MENU	: BBE
AUDIO ADJUST	
SPEAKER	: ON
SURROUND	: OFF

Note:
If the AUDIO MENU is set to AUTO, or if BBE is ON, BASS and TREBLE cannot be adjusted.

Picture Adjustments

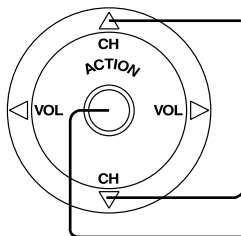


Note:

There is little change when PICTURE is increased with a bright picture or reduced with a dark picture.

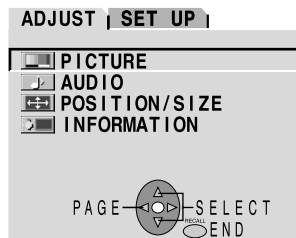
Press the ACTION button to display the MENU screen and select ADJUST.

1

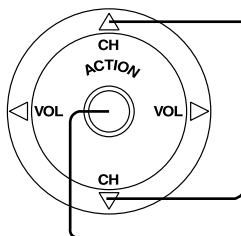


Press to select PICTURE.

Press to display PICTURE screen.

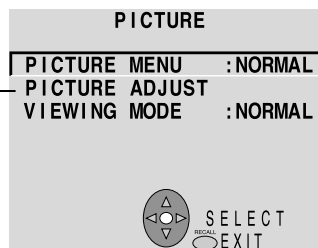
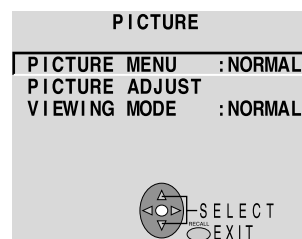


2



Press to select the menu to set each item.

Press to set each item.



See next page

NORMAL

Displays unaltered image.

CINEMA

Ideal for movies.

During PC input, picture menu changes to NORMAL.

NORMAL

Factory setting.

CINEMA

When the brightness is reduced, you can enjoy an easy-on-the-eyes picture as well as extend the life of the LCD panel. When high brightness is not required, we recommend using the CINEMA setting. This is also the best mode for DVD movie and HD picture enjoyment.

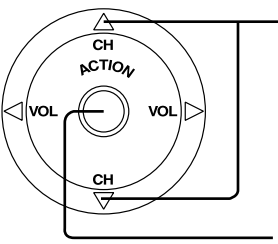
3

RECALL

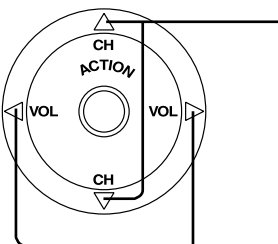


Press to exit menu.

1 Repeat step 1 on page 44.

2  Press to select PICTURE ADJUST.

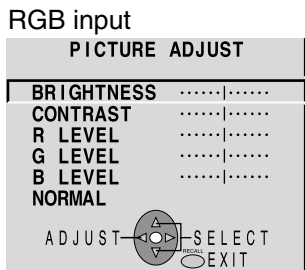
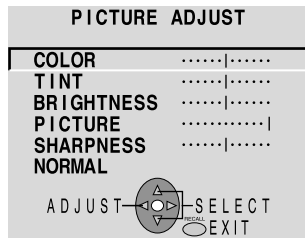
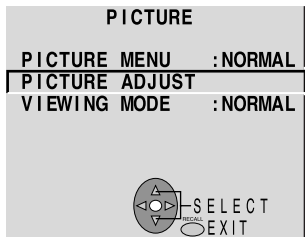
Press to display PICTURE ADJUST screen.

3  Press to select the menu to set each item.

Adjust the desired level by looking at the picture behind the menu.

NORMAL is displayed at default.

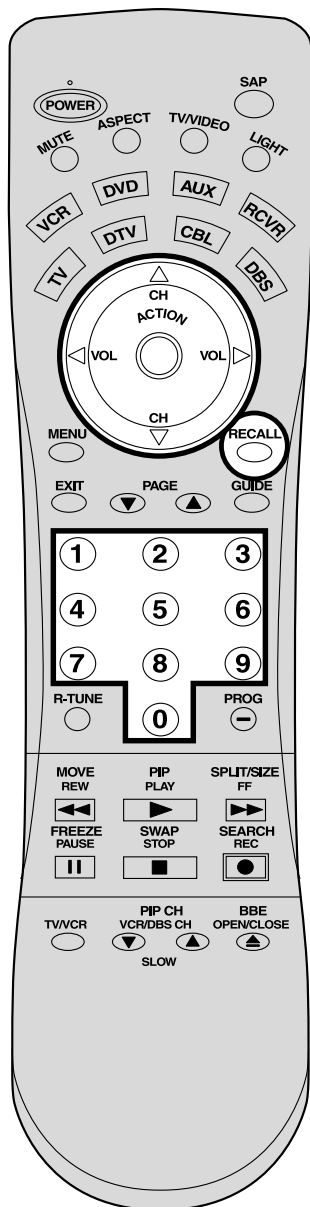
4  Press to exit menu.



Adjustment item	Button	Adjustment Details	Remarks
COLOR	Press ► button.	The color becomes deeper.	Except RGB
	Press ◀ button.	The color becomes paler.	
TINT	Press ► button.	Flesh tones become greenish.	Except RGB
	Press ◀ button.	Flesh tones become reddish.	
BRIGHTNESS	Press ► button.	The screen becomes brighter.	
	Press ◀ button.	The screen becomes darker.	
PICTURE	Press ► button.	Picture intensity becomes stronger as both contrast and color levels are adjusted.	Except RGB
	Press ◀ button.	Picture intensity becomes weaker as both contrast and color levels are adjusted.	
SHARPNESS	Press ► button.	The picture quality becomes sharper.	Except RGB
	Press ◀ button.	The picture quality becomes softer.	
CONTRAST	Press ► button.	Only the Highlights of the image become brighter, adding Contrast.	RGB only
	Press ◀ button.	The Highlights become less bright, diminishing Contrast.	
R LEVEL	Press ► button.	The red component becomes stronger.	RGB only
	Press ◀ button.	The red component becomes weaker.	
G LEVEL	Press ► button.	The green component becomes stronger.	
	Press ◀ button.	The green component becomes weaker.	
B LEVEL	Press ► button.	The blue component becomes stronger.	
	Press ◀ button.	The blue component becomes weaker.	

Lock Feature

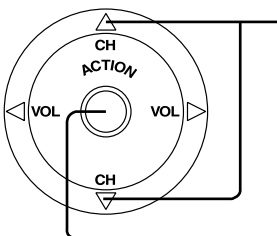
This unit has a built-in V-Chip Control which allows you to block unwanted TV usage based on US MOVIES and US TV PROGRAMS ratings.



Enter Secret Code

A 4-digit code must be entered to view a blocked program or change rating settings. Press the ACTION button to display the MENU screen and select SET UP.

1

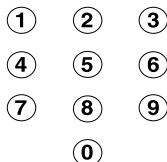


Press to select LOCK.

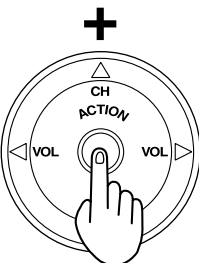
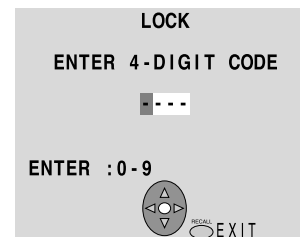
Press to display the LOCK screen.



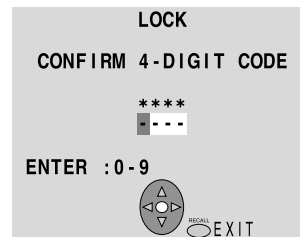
2



Press number keys to enter your secret code.



Press to save 4-digit code.

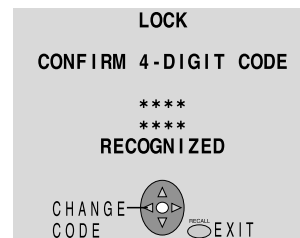


Changing your secret code

- You will need your current code. Press "◀" to clear current code. Repeat step 2 to enter new code.

Note:

- Use a code that is easy to remember and record it in a safe place.



3

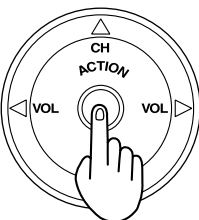
RECALL



Press to exit menu.

Or

Or,



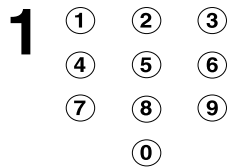
Press to display LOCK menu for rating screen and go to page 47 (US MOVIES Ratings), or page 48 (US TV PROGRAMS Ratings).

Notes:

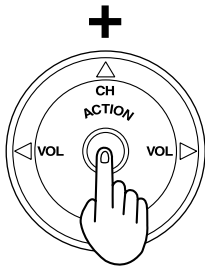
- Once ratings are set, restricted tapes or programs cannot be accessed unless the secret code is entered.
- If you forget your secret code, refer to "Reset User's Memory Functions" on page 49.

Setup US MOVIES Ratings

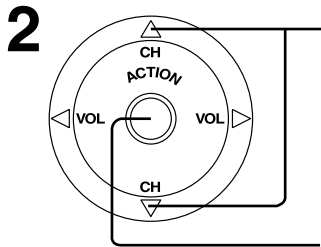
Perform "Enter Secret Code" step 1 on page 46.



Press number keys to enter your secret code.



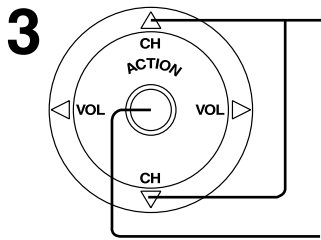
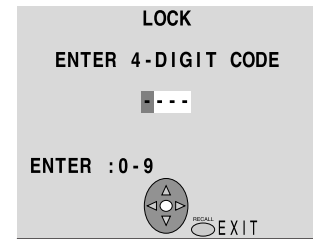
Press to set.



Press to select US MOVIES.

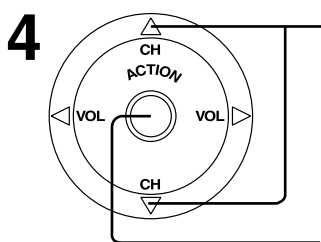
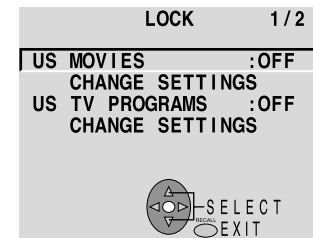
ON : V-Chip Control is activated.

OFF : V-Chip Control is deactivated.



Press to select CHANGE SETTINGS.

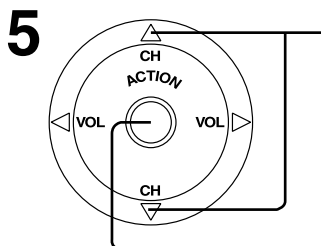
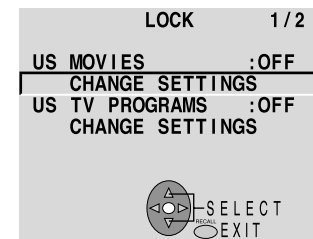
Press to display the CHANGE SETTINGS screen.



Press to select VIEW NR PROGRAMS?.

VIEW NR (Not Rated) PROGRAMS

NO: Cannot view NR programs.
YES: Can view NR programs.

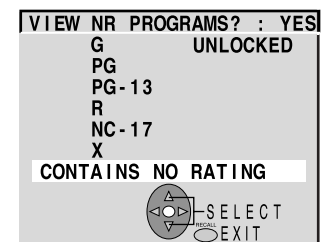


Press to select ratings to be blocked. (P. 49.)

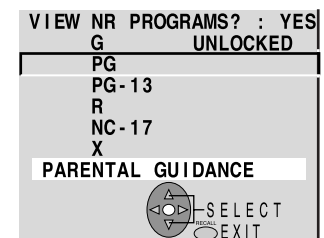
Press to set.

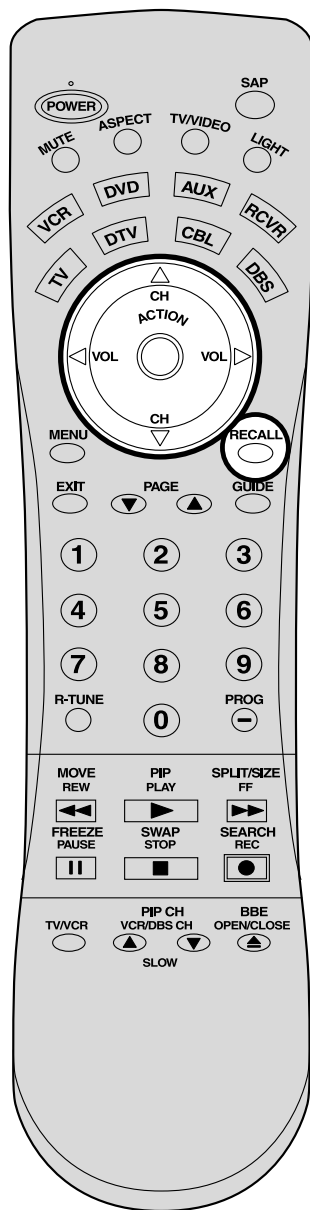
Note:

Ratings highlighted in Red will be blocked while those not highlighted (black letters) will not be blocked.



Press to exit menu.

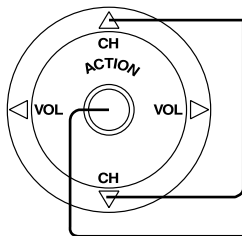




Setup US TV PROGRAMS Ratings

Perform "US MOVIES Ratings" step 1 on page 47.

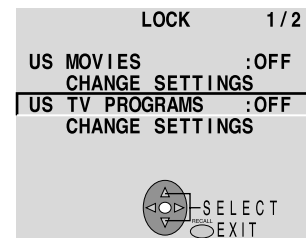
1



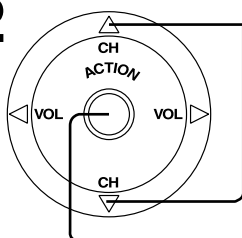
Press to select
US TV
PROGRAMS.

Press to set.

ON : V-Chip Control is activated.
OFF : V-Chip Control is deactivated.

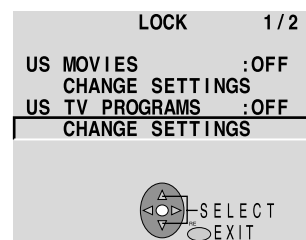


2

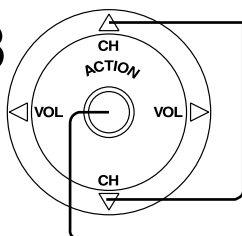


Press to select
CHANGE
SETTINGS.

Press to display the
CHANGE SETTINGS
screen.

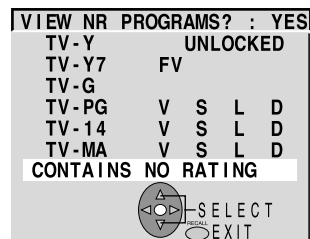


3



Press to select
VIEW NR
PROGRAMS?.

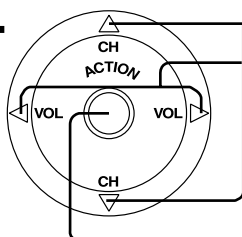
Press to set
"YES" or "NO".



VIEW NR (Not Rated) PROGRAMS

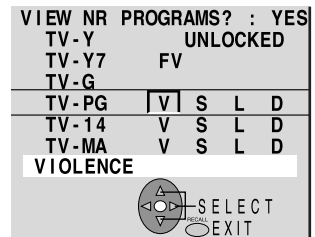
NO: Cannot view NR programs.
YES: Can view NR programs.

4



Press to select
ratings to be
blocked. (P. 49.)

Press to set.



You may select from standard TV ratings (chart 1), or customize to a specific content rating (chart 2.)

Note:

Ratings highlighted in Red will be blocked while those not highlighted (black letters) will not be blocked.

5

RECALL



Press to exit menu.

US MOVIES RATINGS:

G	GENERAL AUDIENCE: All ages admitted.
PG	PARENTAL GUIDANCE SUGGESTED: Some material may not be suitable for children.
PG-13	PARENTS CAUTIONED: Some material may be inappropriate for children under 13.
R	RESTRICTED Children under 17 must be accompanied by a parent or adult.
NC-17	OVER AGE 17 ONLY: No one 17 and under admitted
X	ADULTS ONLY:

US TV PROGRAMS RATINGS: Chart 1

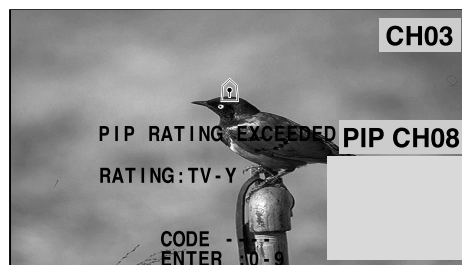
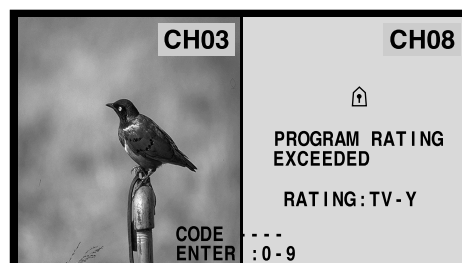
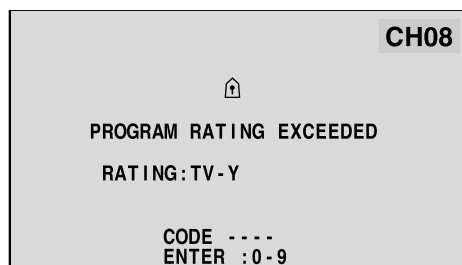
TV-Y	FOR ALL CHILDREN: Content specifically geared to young viewers ages 2-6.
TV-Y7	FOR AGE 7 AND OLDER: May contain mild physical or comedic violence which may frighten children under 7.
TV-G	GENERAL AUDIENCE: Contains little or no violence, strong language, or sexual dialogue or situations.
TV-PG	PARENTAL GUIDANCE: May contain infrequent coarse language, limited violence, some suggestive sexual dialogue and situations.
TV-14	PARENTS CAUTIONED: May contain sophisticated themes, sexual situations, strong language, and more intense violence.
TV-MA	MATURE AUDIENCE: May contain mature themes, profane language, graphic violence, and sexual situations.

US TV PROGRAMS RATINGS: Chart 2

FV	Fantasy Violence
V	Violence
S	Sexual Situations
L	Adult Language
D	Sexually Suggestive Dialogue

Blocking Message

<When V-Chip Control is activated>



Temporarily deactivate V-Chip control

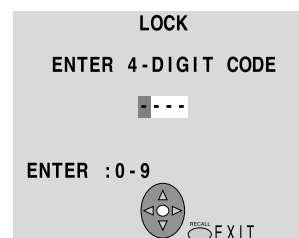
Enter your secret code in the blocking message screen.

- V-Chip control is reactivated when power is turned off or power failure occurs.

Reset User's Memory Functions

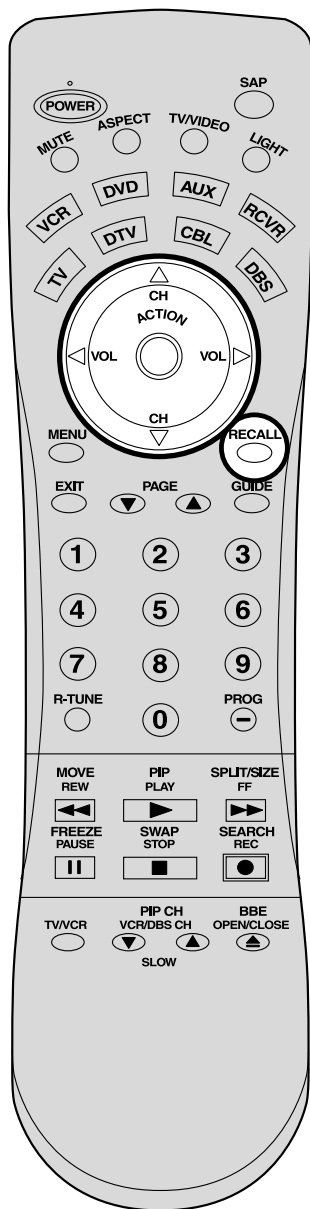
Use when moving unit to a new location, or if the secret code is forgotten.

While the OSD at right is displayed, press the VOL - button on the Projection display and ACTION button on the Remote control at same time for more than 5 seconds. When reset is finished, power shuts off automatically.



Closed Captions

This receiver has a built in decoder that provides a visual depiction of the audio portion of a television program in the form of written words across the screen (white or colored letters on a black background). It allows the viewer to read the dialogue of a television program or other information.

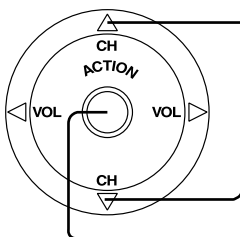


CAPTION MODE

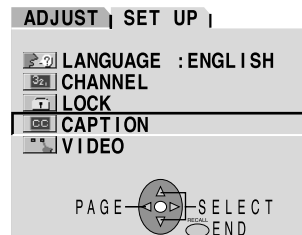
Activates the On-Screen Closed Caption feature. When activated this feature will remain on until OFF is selected in this menu.

Press the ACTION button to display the MENU screen and select SET UP.

1

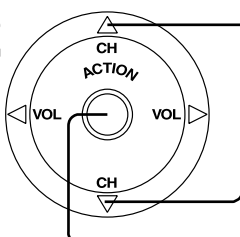


Press to select CAPTION.

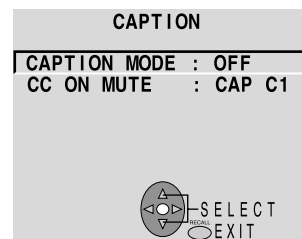


Press to display the CAPTION screen.

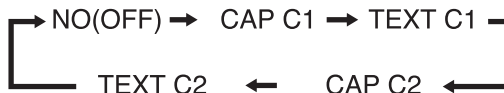
2



Press to select CAPTION MODE.



Press repeatedly to select CAPTION MODE.



Closed Caption Modes from which to Choose

Caption Mode: CAP C1 or C2

A narration of selected TV programs is displayed. Check TV program listings for C. C. (Closed Caption) broadcasts.

Caption Mode: TEXT C1 or C2

The lower half of the screen will be blocked out. When the TV station broadcasts information, such as program listings, it will appear in this space.

Caption Mode: OFF

Closed Caption /Text narration will not be displayed.

Note:

The closed caption or text signal may be broadcast over C1, C2, or both. Also, text contents can vary so you may wish to try different settings.

3

RECALL



Press to exit menu.

CC ON MUTE

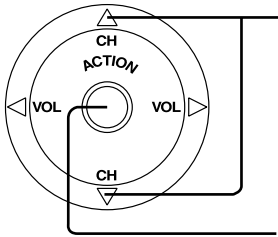
Activates the On-Screen Closed Caption feature, when the MUTE button on the Remote Control is pressed. To deactivate, press the MUTE button again.

Note:

This feature functions when the Closed Caption Mode is in the "OFF" position. The program being viewed must be broadcast with Closed Caption.

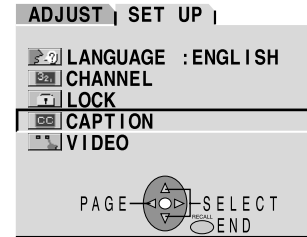
Press the ACTION button to display the MENU screen and select SET UP.

1

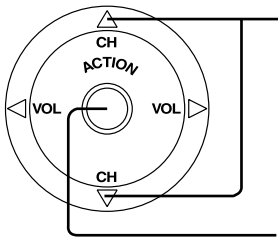


Press to select
CAPTION.

Press to display
the CAPTION screen.



2



Press to select
CC ON MUTE.

Press repeatedly to select
CC ON MUTE.



3



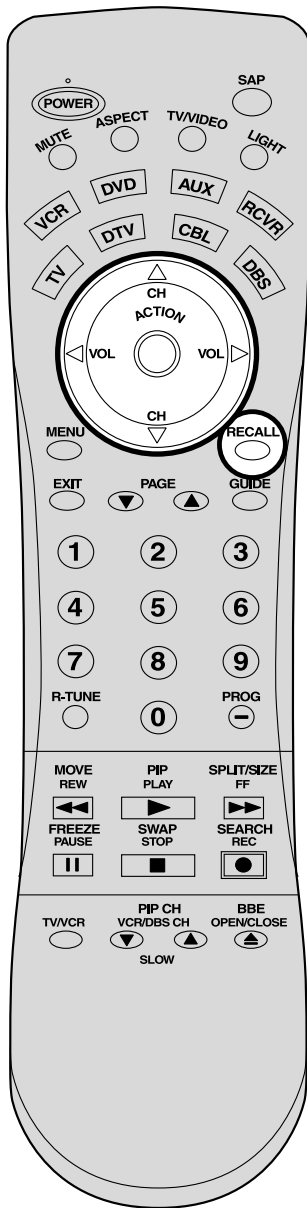
Press to exit menu.

Notes:

- The setting for CC ON MUTE is valid only when the CC MODE is OFF, CC MODE set to ON will override CC ON MUTE.
- Closed Caption is not displayed if the input signal is COMPONENT VIDEO INPUT of 480P or more, or from RGB.

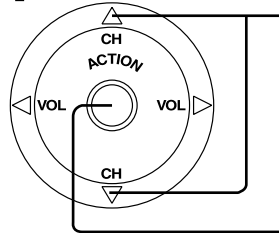
Channel Caption Feature

Station names, e.g. ABC, TNN, etc. so that they will appear when a channel is selected.
Choose 24 preset names.



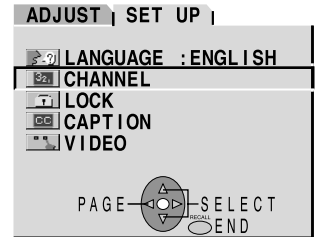
Press the ACTION button to display the MENU screen and select SET UP.

1

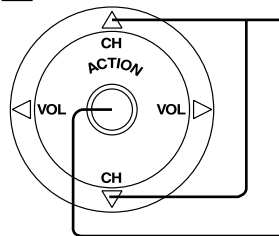


Press to select CHANNEL.

Press to display the SET UP CHANNEL screen.

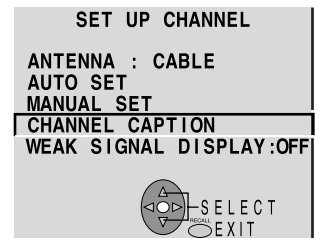


2

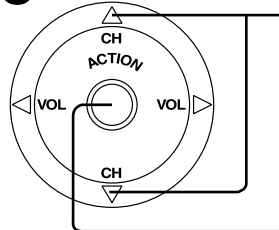


Press to select CHANNEL CAPTION.

Press to display the CHANNEL CAPTION screen.

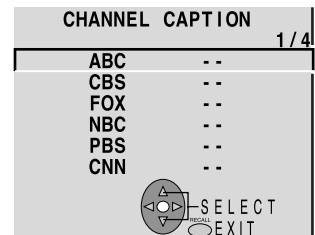


3



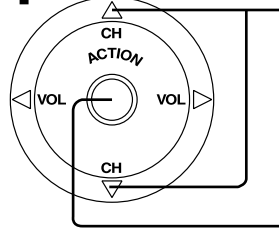
Press to select a station.

Press to move cursor to the right.



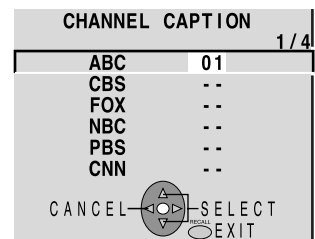
To remove a registered channel number, select the station, then press the ◀ button (CLEAR).

4



Press to select channel number.

Press to set.



To make a correction, press the ◀ button.

- Repeat step 3 and 4 until the Caption List is complete.

5

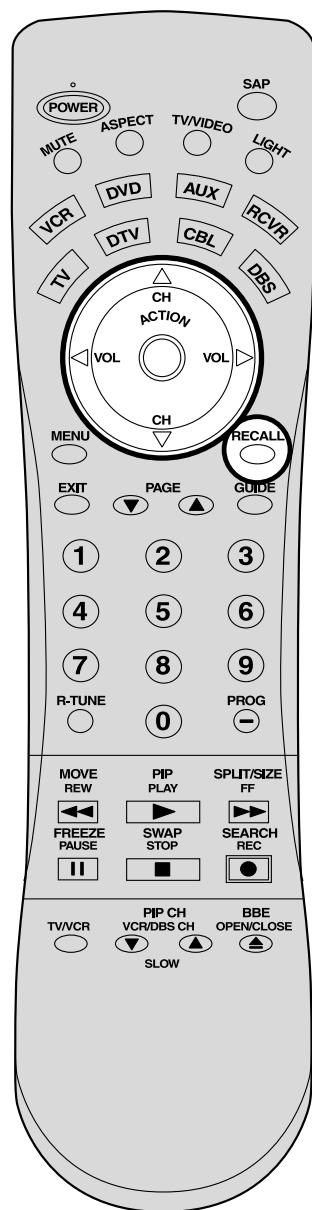
RECALL



Press to exit menu.

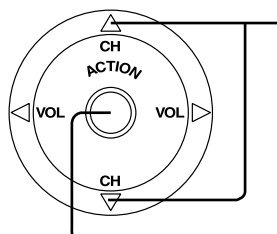
Weak Signal Display Feature

When “ON” is selected, the picture is displayed even when a broadcast signal is weak or non-existent.



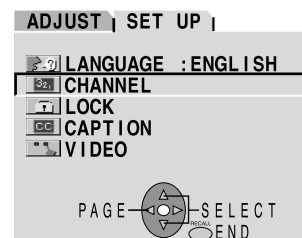
Press the ACTION button to display the MENU screen and select SET UP.

1

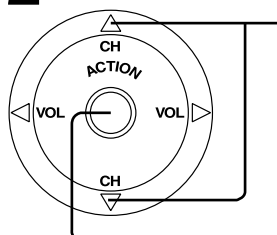


Press to select CHANNEL.

Press to display the SET UP CHANNEL screen.

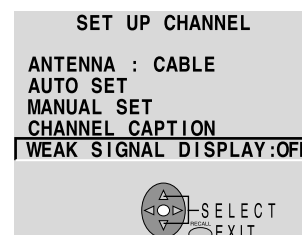


2



Press to select WEAK SIGNAL DISPLAY.

Press to set “ON” or “OFF”.



ON : Picture is displayed regardless of signal condition, and may not always be clearly visible.

OFF : Screen turns solid blue when signal is absent or weak.

3

RECALL



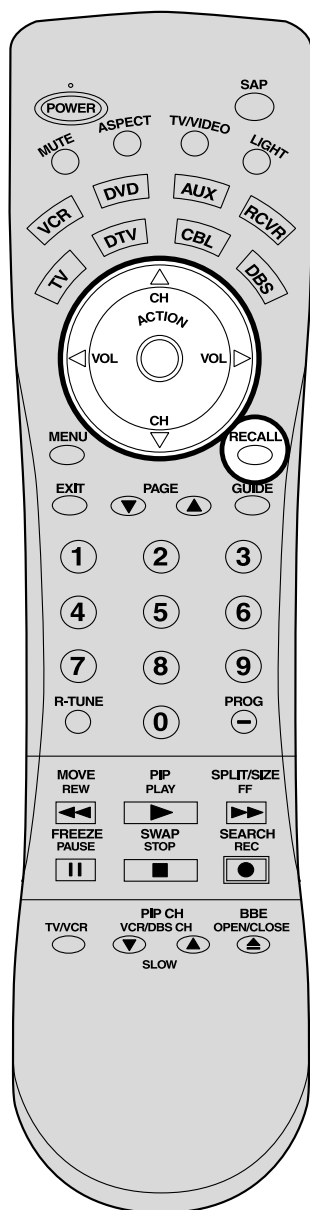
Press to exit menu.

Note:

If unit is connected to equipment which has blue back feature, selecting “ON” will have no effect on the other equipment.

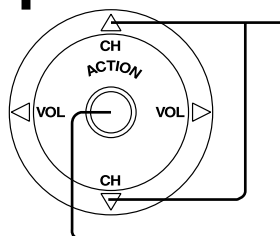
Video NR (Noise Reduction) Feature

In the event of weak signal conditions, the Video NR circuitry reduces noise in the luminance channel. It is important to note that Video NR should remain OFF for maximum picture detail when receiving a strong signal or viewing high-quality video.



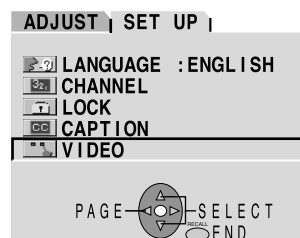
Press the ACTION button to display the MENU screen and select SET UP.

1

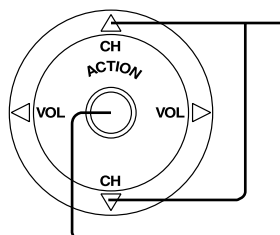


Press to select VIDEO.

Press to display the VIDEO screen.

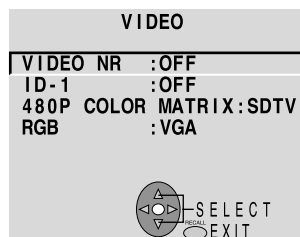


2



Press to select VIDEO NR.

Press to set "ON" or "OFF".



ON : When signal is noisy
OFF : When signal is high-quality

3

RECALL



Press to exit menu.

Note:

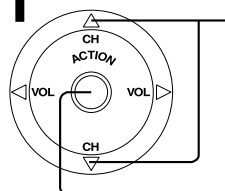
When an RGB signal is input, VIDEO NR is set to OFF only.

Automatically changing screen size

If the received signal contains screen size specifications in RF, VIDEO INPUT (1–3) or COMPONENT VIDEO INPUT (1–2), the screen size is automatically changed.

Press the ACTION button to display the MENU screen and select SET UP.

1

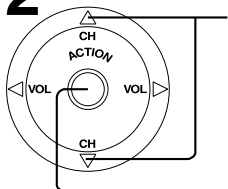


Press to select VIDEO.

Press to display the VIDEO screen.



2

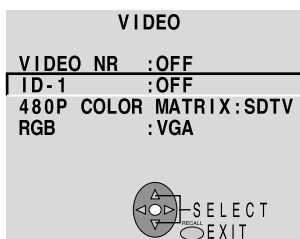


Press to select ID-1.

Press to set "ON" or "OFF".

ON : When screen size specification signals are detected, screen size is automatically changed.

OFF : The screen size is not automatically changed. (Turn OFF if this function does not operate properly.)



3



Press to exit menu.

Notes:

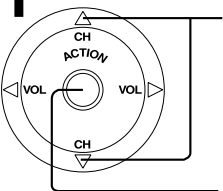
- When ID-1 is detected and screen size is changed, Aspect mode will be displayed.
- When displaying split screen, ID-1 is not detected.

Setting when 480p signals (sequential scan) are input through COMPONENT VIDEO INPUT

Adjust 480p signals to achieve a natural color from digital equipment connected to COMPONENT VIDEO INPUT (Y, P_B / C_b, P_R / C_r input terminals).

Press the ACTION button to display the MENU screen and select SET UP.

1

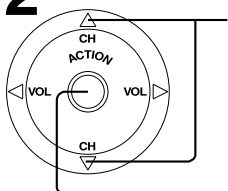


Press to select VIDEO.

Press to display the VIDEO screen.



2



Press to select 480P COLOR MATRIX.

Press to set "SDTV" or "HDTV".

SDTV : When the input signal is a normal TV system (NTSC).

HDTV : When the input signal is a High-Definition system (HD).



3



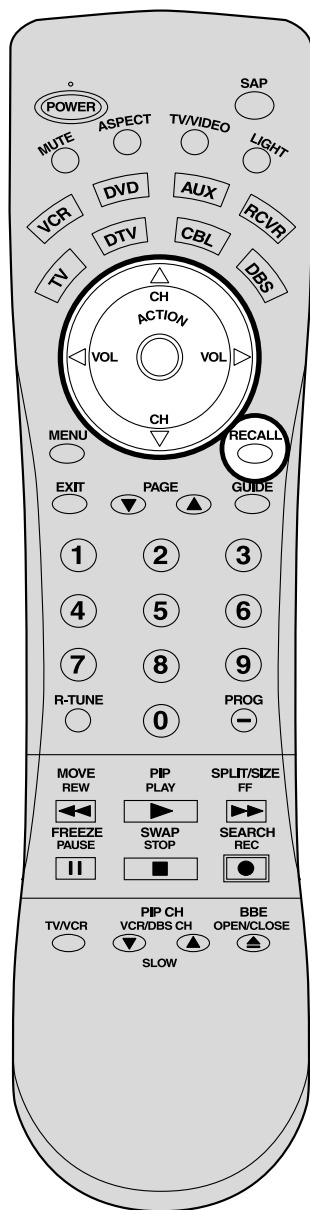
Press to exit menu.

Note:

480p COLOR MATRIX does not need to be set when using Hi-Definition equipment or 480i output equipment.

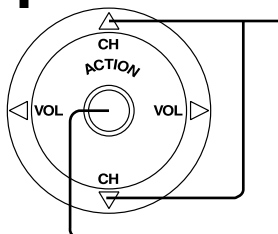
RGB Input Feature

Set the signal to be input to the Projection display's front PC IN terminal. Most of analog RGB signals are selected automatically. When RGB input signal is VGA 60Hz from PC or 480P from other equipment, you must manually switch to the desired input.



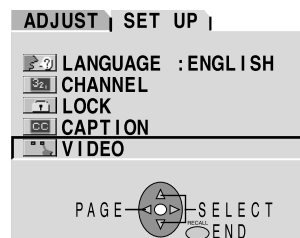
Press the ACTION button to display the MENU screen and select SET UP.

1

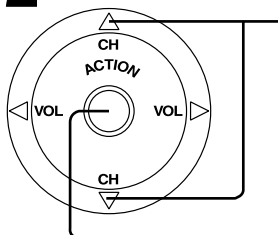


Press to select VIDEO.

Press to display the VIDEO screen.



2



Press to select RGB.

Press to set "VGA" or "480P".



VGA : When RGB input signal is VGA 60Hz from PC
480P : When RGB input signal is 480P from other equipments

3

RECALL



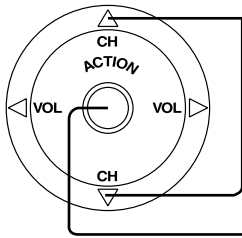
Press to exit menu.

Switching languages for display

The language of the Projection display is set to English as the factory setting. To select one of 3 different languages for on-screen displays, follow the instructions below.

Press the ACTION button to display the MENU screen and select SET UP.

1



Press to select LANGUAGE.

Press repeatedly to select the desired LANGUAGE.



2

RECALL



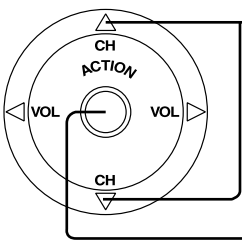
Press to exit menu.

Information

You can display the input signal type. Display items differ depending on the input signal.

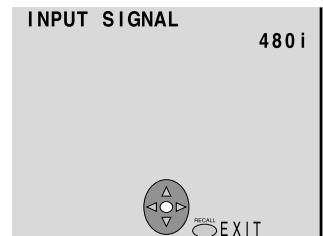
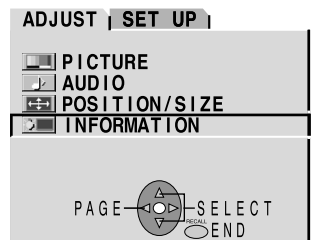
Press the ACTION button to display the MENU screen and select ADJUST.

1



Press to select INFORMATION.

Press to display INFORMATION screen.



2

RECALL



Press to exit menu.

Cleaning the Air Filter

The Air Filter should be cleaned about every 400 hours.

- 1 When the accumulated operating time reaches 400 hours, the screen on the right will be displayed for 5 minutes. When this happens, please follow the instructions and clean the air filter. This is very important!

- 2 Turn the POWER button to OFF.
Wait until the cooling fan stops and the POWER indicator turns solid red.

- 3 Remove the right Speaker cover.
Place your fingertips under the Speaker cover and pull it from the Projection display.

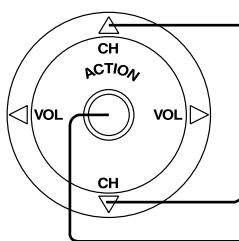
- 4 Clean the Filter.
Gently remove any accumulated dust from Air Filter unit with your vacuum cleaner.

CAUTION: Please be very careful not to damage or rip the filter material. Operating Projection display with torn or damaged Filter may cause damage to Projection display.

- 5 Replace the Speaker cover.
 - Operating this unit without the air filter installed will result in dust or dirt being drawn into the LCD projection display assembly. Visibly, the picture will be degraded.

If the dust cannot be removed by cleaning, it is time to replace the air filter.

- 6 This screen appears when Projection display is turned on. If cleaning is done, select YES.

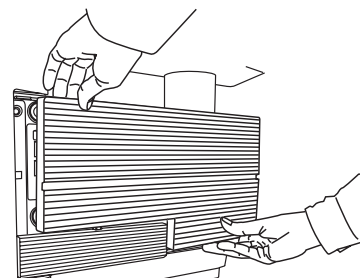


Press to select
NO or YES.

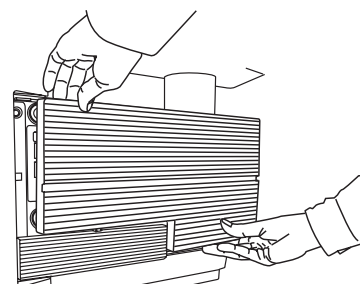
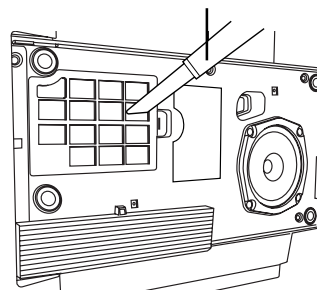
Press to set.

CAUTION: Please do not operate without the air filter. Serious damage will occur.

AIR FILTER CLEANING IS RECOMMENDED AT THIS TIME. FIRST TURN THE UNIT OFF. REMOVE THE RIGHT SPEAKER COVER AND FOLLOW THE INSTRUCTIONS. CLEANING THE AIR FILTER WILL MAXIMIZE PRODUCT RELIABILITY.



Cleaner



DID YOU CLEAN THE AIR FILTER?

NO.

YES.

IT IS VERY IMPORTANT.



Clogged Air Filter Detection

When a dirty or clogged air filter is detected, the screen at right is displayed for 1 minute after which the Power is turned OFF.

AIR FILTER CLEANING IS RECOMMENDED AT THIS TIME. FIRST TURN THE UNIT OFF. REMOVE THE RIGHT SPEAKER COVER AND FOLLOW THE INSTRUCTIONS. UNIT WILL BE TURNED OFF AFTER 1 MINUTE.

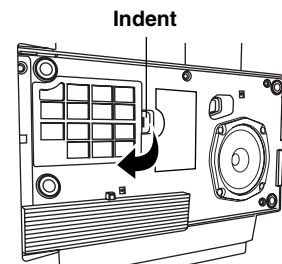
Note:

At this time, only the POWER button is operational. When the power is turned off with the POWER button, the usual confirming message will not appear. (P. 21)

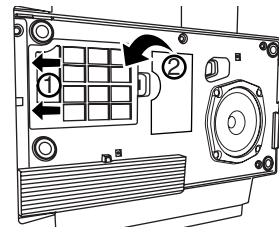
Air Filter Replacement

Replace filter when it remains clogged, dirty or damage even after cleaning.

- 1** Remove the Air Filter unit
Grasp the indented portion of the Air Filter and pull it out of the Projection display.



- 2** Replace the new Air Filter unit.
Slide the new Air Filter into the Projection display so that the indentations of the filter and Projection display are aligned. Then, press on the arrow mark ② until you hear it snap into place.



Replacing the lamp unit

The lamp unit is sold separately. To purchase a replacement, call the Panasonic accessory department, toll free at: 1-800-332-5368.

Lamp unit Part No. : TY-LA1500

Lamp unit replacement period

The lamp has a maximum life of about 5 000 hours.

- When the stipulated time is reached, "THE LAMP NEEDS TO BE REPLACED,***" will be displayed for about 5 minutes.
- The LAMP indicator lights red.

THE LAMP NEEDS TO BE REPLACED, AND THE LAMP HOUR METER NEEDS TO BE RESET.



Due to the characteristics and use conditions of individual lamps, the lamp may cease to light before the stated lamp life.

Influences of frequent lighting, continuous light use for over 24 hours, the number of times lit, the length of time between lightings, etc. may shorten lamp life.

(Because of this, we recommend having a replacement lamp on hand.)

WARNING:

The high-pressure lamp could explode if not properly handled and lamp fragments could cause injury.

Important Points to keep in mind

When replacing the lamp unit with a new one, pay attention to the following points.

Warning:

- Because the temperature of the lamp unit is elevated immediately after its use, directly touching it may cause burns. Please allow the lamp to cool before handling or replacing the lamp unit.

Cautions for Lamp Unit Replacement:

- Handle the removed old lamp unit carefully. If handled improperly, it may have a risk of explosion.
- Wear gloves when replacing the lamp unit.
- If replacing the lamp unit becomes necessary during the operation of the TV, follow the procedure below to turn off the power and wait until the lamp unit cools completely.

1. Press the POWER button on the remote control unit to turn off the power.
2. Wait for about 1 minute until the cooling fan stops.
 - **The lamp cooling fan will continue to operate for about 1 minute after turning off the power. Do not unplug the power cord from the outlet until the fan has stopped. Avoid interrupting the power line by using circuit breakers or switchable power strips.**
3. After the cooling fan has stopped, Unplug the power cord from the outlet.

- Please wait more than one hour for lamp replacement.

[If you need to replace the lamp more urgently]

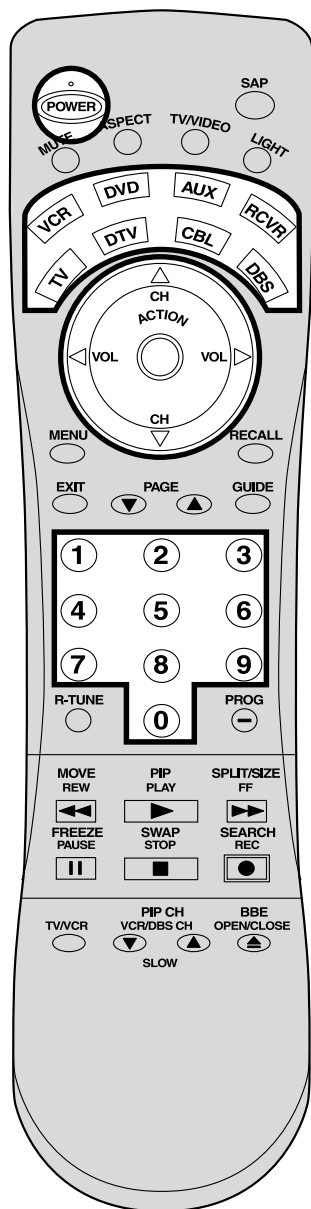
- The Projection display has a forced cooling feature. After the POWER button is turned OFF, and sometime during about the first minute of the normal cooling fan operation, press the VOL+ button on the Projection display and the ▲ button on the Remote control at same time for more than 5 seconds. The cooling fan operates for about 10 minutes.

Refer to the instructions enclosed with the lamp unit (Part No.: TY-LA1500) when replacing the lamp.

Remote Control Quick Reference Guide (Operating peripheral equipment)

Programming The Illuminated Remote Control Using Access Codes

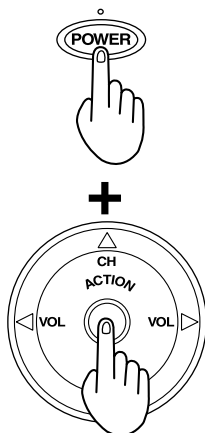
The remote control can be preset for other manufacturers, by utilizing the **REMOTE MODE SELECTION BUTTONS** for **CABLE, DTV, VCR, RCVR** (a **Receiver** or **Amplifier**), **DVD** (DVD or CD), **DBS** and **AUX** (for **Cassette Player** or a **PVR**.) Details on remote control buttons to operate peripheral equipment. (PP. 66, 67)



1 Setting up the remote using the numerical keys.

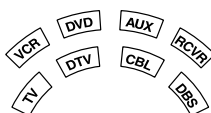
(When code is known):

1



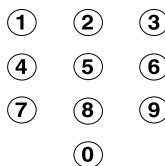
Press and hold the **POWER** and **ACTION** buttons simultaneously **for at least 5 seconds**. After 5 seconds, all the illuminated mode buttons will begin to flash. Then let go of the **POWER** and **ACTION** buttons.

2



Press the desired mode button. The mode button will illuminate steadily, all others will go out.

3



Enter the three digit set up code, by using the Remote Control Keyboard. If the correct code is entered, the mode button will blink twice and then go out. Now your remote is set for this code. Then, press the Remote Control **POWER** button to test the component. If the procedure was successful, the component will turn on.

Device	Operate	Default
TV	TV (Only Panasonic)	Panasonic Code
VCR	VCR (Preset)	Panasonic Code
CBL	Cable Boxes (Preset)	Panasonic Code
DBS	DBS Boxes (Preset)	Panasonic Code
RCVR	RCVR (Preset)	Panasonic Code
AUX	Cassette Players, PVR (Preset)	Panasonic Cassette Players Code
DVD	DVD & LD & CD Player (Preset)	Panasonic DVD Code
DTV	STB (Only Panasonic)	Panasonic Code

Notes:

- Due to changes in infra-red commands used by manufacturers, some brands have several codes. If your unit does not respond to the first code, please try the next one.
- If an incorrect number is entered (or there is an incomplete entry after 30 seconds), the button illumination goes out (no blink) and settings are unchanged.
- Repeat setup after remote battery replacement.
- Remote will not control every component made by the manufacturer listed. If you get no response, your particular component cannot be controlled. There are NO additional codes for the products listed. If your product is not listed, then the remote is not compatible with that product.

Remote Control Quick Reference Guide (Operating peripheral equipment)



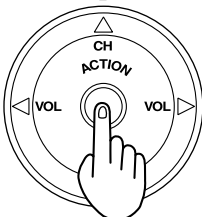
2 Setting to the remote using the step and set method (When code is not known):

1

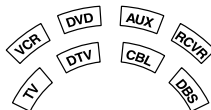


Press and hold the POWER and ACTION buttons simultaneously **for at least 5 seconds**. After 5 seconds, all the illuminated mode buttons will begin to flash. Then let go of the POWER and ACTION button.

+

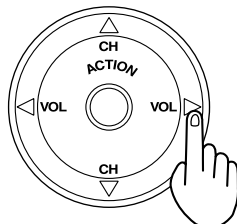


2



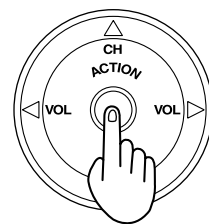
Press the mode button.
The mode button will illuminate steadily, all others will go out.

3



Press “▶” button to step to the next code. Press POWER button to send a test signal in that format. Continue doing this until the proper device code is found, And the target device responds.

4



Once the code has been found, press the ACTION button to lock it in.

Notes:

- The step and set mode will start from the current device (not the beginning of the library, except for the first time).
- The step and set mode works in the reverse direction using the “◀” button.

Infrared Remote Codes for Specific Components

Helpful Hint: Write down the code numbers for your components in the space provided below. This will serve as a handy reference whenever you need to reprogram your remote control.

CABLE

Cable Box

DBS

Digital Broadcast System

Other Component

Other Component

VCR

Video Cassette Recorder

RCVR

Receiver or Amplifier

Other Component

Other Component

CD

Compact Disc Player

DVD

Digital Versatile Player

Other Component

Other Component

Remote Control Quick Reference Guide (Operating peripheral equipment)

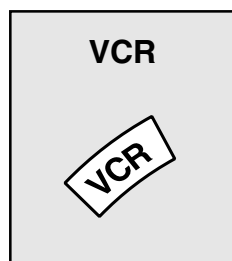
Infrared Codes Index

The remote control is capable of operating many brands of peripheral equipment. Refer to page 61 and 62 for programming procedures.

Note: The remote control memory is limited and therefore some models may not operate. The remote control is not designed to control all features available in all models.

Note: After entering the proper infrared code, press the desired Mode Selection button on the remote control. Refer to page 8 and 66 to 67 for details on operating peripheral equipment using the remote control.

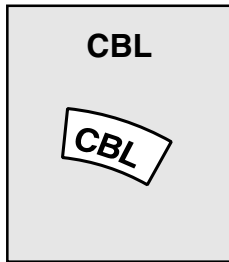
VCR Infrared Codes Index



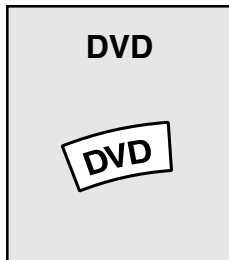
Maker List (VCR)			
Maker	Set Up No.	Maker	Set Up No.
ADMIRAL	335	ORION	320, 326
AIWA	332	PANASONIC	321, 322, 323, 324
AKAI	314, 315, 316, 329	J.C. PENNEY	300, 305, 310, 311, 324, 339, 345
AUDIO DYNAMIC	311, 339	PENTAX	300, 311, 345
BELL & HOWELL	305, 313	PHILCO	320, 323, 324, 326, 331, 343
BROKSONIC	320, 326	PHILIPS	323, 324, 331
CANON	323, 325	PIONEER	323
CITIZEN	306	PROSCAN	300, 301, 302, 323, 324, 331, 333, 345, 346
CRAIG	305, 306, 329	QUASAR	321, 322, 323, 324
CURTIS MATHES	324, 345	RADIO SHACK	305, 309, 324, 333, 336, 340
DAEWOO	301, 324, 343	RCA	300, 301, 302, 323, 324, 331, 333, 345, 346
DBX	310, 311, 339	REALISTIC	305, 309, 324, 336, 340
DIMENSIA	345	SAMSUNG	302, 304, 333
EMERSON	303, 319, 320, 325, 326, 343	SANSUI	320, 326, 339, 352
FISHER	305, 307, 308, 309, 313	SANYO	305, 309, 313
FUNAI	320, 326, 334	SCOTT	301, 302, 304, 309, 320, 326, 338, 340, 347, 348
GE	324, 333, 345	SEARS	300, 305, 306, 307, 308
GOLDSTAR	306	SHARP	335, 336
GRADIENTE	334	SHINTOM	317
HITACHI	300, 323, 345	SIGNATURE 2000	335
INSTANT REPLAY	323, 324	SINGER	317
JENSEN	339	SONY	328, 329, 330
JVC	310, 311, 334, 339	SYLVANIA	323, 324, 331
KENWOOD	306, 310, 311, 339	TASHIRO	306
LXI	300, 305, 306, 307, 308, 309	TATUNG	310, 311, 339
MAGNAVOX	323, 324, 331	TEAC	310, 311, 339
MARANTZ	310, 311, 339	TECHNICS	321, 322, 323, 324
MARTA	306	TEKNIKA	324
MEMOREX	309, 324	TOSHIBA	301, 346
MGA	338, 340, 341, 347, 348	VECTOR RESEARCH	311
MINOLTA	300, 345	WARDS	306, 309, 335, 336, 344
MITSUBISHI	338, 340, 341, 347, 348	YAMAHA	305, 310, 311, 339
MULTITECH	304, 347	ZENITH	306, 344
NEC	310, 311, 334, 339		
OLYMPIC	323, 324		
OPTIMUS	306, 321, 328, 335		

Remote Control Quick Reference Guide (Operating peripheral equipment)

CABLE CONVERTER BOX AND DVD, CD PLAYERS Infrared Codes Index



Maker List (CBL)			
Maker	Set Up No.	Maker	Set Up No.
ABC	124	PULSAR	105, 132
ARCHER	125, 132	PUSER	132
CABLEVIEW	105, 132	RCA	115
CITIZEN	105, 122	REALISTIC	132
CURTIS	112, 113	REGAL	112, 118, 140, 141, 142, 145
DIAMOND	124, 125, 132	REGENCY	134
EAGLE	129	REMBRANDT	105, 132, 137
EASTERN	134	SAMSUNG	105
GCBRAND	105, 132	SCIENTIFIC ATLANTA	111, 112, 113
GEMINI	122	SLMARK	101, 105
GENERAL	111, 119, 120, 121, 122, 123,	SPRUCER	105, 110
INSTRUMENT /	124, 125, 126, 127	STARGATE	105, 132
JERROLD		TELEVIEW	101, 105
HAMLIN	112, 118, 140, 141, 142, 145	TEXSCAN	144
HITACHI	103, 124	TOCOM	135
MACOM	103, 104, 105	TOSHIBA	104
MAGNAVOX	133	UNIKA	125, 132
MEMOREX	130	UNIVERSAL	122, 132
MOVIE TIME	105, 132	VIDEOWAY	106
OAK	102, 137, 139	VIEWSTAR	129, 130
PANASONIC	109, 110, 114	ZENITH	100, 117
PHILIPS	106, 107, 128, 129, 130	ZENITH / DRAKE	100
PIONEER	101, 116	SATELLITE	



Maker List (DVD)			
Maker	Set Up No.	Maker	Set Up No.
DENON	100	SABA	101
FERGUSON	101	SAMSUNG	110
JVC	109	SHARP	108
mitsubishi	105	SONY	104
NORDMENDE	101	TECHNICS	100
PANASONIC	100	THOMSON	101
PHILIPS	103	TOSHIBA	103
PIONEER	102	YAMAHA	100
RCA	101	ZENITH	107

Maker List (CD)			
Maker	Set Up No.	Maker	Set Up No.
ADMIRAL	226	OPTIMUS	208, 218, 220, 222
AIWA	233, 235	PANASONIC	224, 225, 227
CARVER	229	PHILIPS	229, 230
DENON	242	PIONEER	208
EMERSON	239	QUASAR	224, 225, 227
FISHER	205	RCA	231, 237, 238, 247
HARMAN/KARDON	219, 220, 221, 223	SANSUI	210, 246
HITACHI	207	SANYO	205
JENSEN	234	SCOTT	210, 246
JVC	240, 241, 245	SHARP	242, 243
KARDON	223	SHERWOOD	220
KENWOOD	200, 201, 211, 245	SONY	228
LXI/SEARS	236	SOUNDESIGN	244
MAGNAVOX	229, 232	TEAC	212, 216, 218
MARANTZ	229	TECHNICS	224, 225, 227
MCINTOSH	221	VICTOR	240, 241, 245
NAKAMICHI	210	YAMAHA	202, 203, 204
ONKYO	214, 215		

Remote Control Quick Reference Guide (Operating peripheral equipment)

CASSETTE PLAYERS, PERSONAL VIDEO RECORDERS, RECEIVERS, AMPLIFIERS, and DBS Infrared Codes Index

AUX

AUX

Maker List (TAPE)

Maker	Set Up No.	Maker	Set Up No.
AIWA	223, 224, 225	PHILIPS	222
DENON	231	PIONEER	204
FISHER	203	RCA	226, 227, 228
JENSEN	214	SANSUI	205, 210
JVC	229, 230	SHARP	231
KENWOOD	200, 207	SONY	219, 220
MARANTZ	202	TEAC	210, 211, 215
NAKAMICHI	205	TECHNICS	216, 218
ONKYO	208, 209, 213	YAMAHA	201, 202
PANASONIC	216, 218		

Maker List (Personal Video Recorders)

Maker	Set Up No.
Panasonic Replay TV	100
Philips Tivo	101
Sony Tivo 102	102

RCVR

RCVR

Maker List (RCVR)

Maker	Set Up No.	Maker	Set Up No.
ADMIRAL	120	OPTIMUS	103, 127, 130, 131
AIWA	125, 126	PANASONIC	118, 119, 121
DENON	134, 135, 136	PHILIPS	123
FISHER	104	PIONEER	105, 107
GARRARD	113	QUASAR	118, 119, 121
HARMAN KARDON	115, 123	RCA	103, 105, 127, 130, 131
JENSEN	129	SANSUI	103, 111, 139
JVC	132, 133	SHARP	134, 137
KENWOOD	100, 108	SONY	122
MAGNAVOX	127	SOUNDESIGN	138
MARANTZ	124	TEAC	111, 112, 113
MCLNTOSH	116	TECHNICS	118, 119, 121
NAKAMICHI	106	VICTOR	132, 133
ONKYO	109, 114	YAMAHA	101, 102

DBS







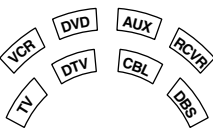
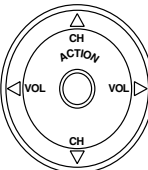


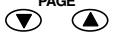


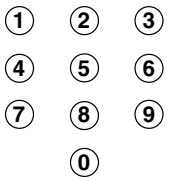

DBS

Maker List (DBS)

Maker	Set Up No.	Maker	Set Up No.
DISH NETWORK (ECHOSTAR)	105, 115, 116	MAGNAVOX	101, 102
ECHO STAR	105	PANASONIC	104
EXPRESS VU	105, 115	PHILIPS	101, 102
G.E.	106	PRIMESTAR	108
G.I. (GENERAL INSTRUMENT)	108	PROSCAN	106, 109, 110, 113
GRADIENTE	114	RCA	106, 109, 110, 113
HITACHI	103, 111, 112	SONY	107
HNS (HUGHES)	103	STAR CHOICE	103, 108
		TOSHIBA	100
		UNIDEN	101, 102

Remote Control Quick Reference Guide (Operating peripheral equipment)

Quick Reference Functional Button Chart

BUTTON	MODE	FUNCTION
	All Components	Turns selected components On and Off
	TV	Press to access Second Audio program
	TV CBL RCVR	Mutes audio
	TV DTV DBS	Select picture size (ratio) to match programming format.
	TV RCVR	Selects the input mode
	Remote Control	Illuminate buttons
	All Components	Component mode selection for remote control
	TV CBL VCR AUX DBS RCVR DTV DVD CD TV CBL RCVR DBS DVD DTV	Channel Up/Down Navigation Up/Down Navigation Up/Down Next/Previous Track Volume (+/-) Navigation Left/Right
	TV DTV CBL DBS DVD	TV Menu DTV Menu Enter DBS Menu Select
	DVD DTV DBS	DVD Menu Menu On/Off Menu On/Off
	DBS DVD	Page Up/Down Skip +/-
	TV CBL VCR DBS DTV AUX (Cassette Deck)	Previous Channel Previous STB Channel Deck A/B
	TV VCR DBS DVD DTV CD	Onscreen Display Onscreen Display Time Format
	TV VCR CBL DBS All Components CD DVD RCVR	Selects Channel Selects Code Selects Track Selects chapter Keys 1,2,3 and 4 select A/V inputs; 5 CD; 6 Tuner; 7Phono; 8 Cassette Deck; 9 Aux
	DTV DBS	Exit Menus

Notes:

- Not all functions listed may be controllable.
- Some TV, Cable Box and DSS Receiver brands require you to turn on the power manually.

Remote Control Quick Reference Guide (Operating peripheral equipment)

Quick Reference Functional Button Chart

BUTTON	MODE	FUNCTION
GUIDE 	DTV DBS DVD CD	DTV Guide (Electronic Program Guide) DBS Guide Title Next Disc
PROG 	DTV DBS	Delimiter between major and minor channel number
MOVE REW 	TV VCR AUX (Cassette Deck) DVD CD RCVR	PIP Move Rewind Skip Search Fast Rewind Search Fast Rewind Search Fast Rewind Surround (-)
PIP PLAY 	TV VCR AUX (Cassette Deck) DVD CD	PIP On/Off Play Play Play Play
SPLIT/SIZE FF 	TV VCR AUX (Cassette Deck) DVD CD RCVR	SPLIT function / PIP Size Fast Forward Fast Forward Skip Search Fast Forward Skip Search Fast Forward Surround (+)
FREEZE PAUSE 	TV VCR AUX (Cassette Deck) CD DVD	Freeze Pause Pause Still
SWAP STOP 	TV VCR DVD CD AUX (Cassette Deck)	PIP Swap / SPLIT swap Stop Stop Stop Stop
SEARCH REC 	TV DTV VCR AUX (Cassette Deck) DBS	Channel Search Info (EPG) Record Record Record
TV/VCR 	VCR DBS	TV/VCR switch TV/DBS switch
PIP CH VCR/DBS CH 	TV VCR DVD DBS CD RCVR	PIP Channel Up/Down Channel Up/Down Slow +/- Channel Up/Down Repeat/Random Center Channel (+/-)
BBE OPEN/CLOSE 	TV DVD CD AUX (Cassette Deck)	BBE Sound On/Off Open/Close Open/Close Open/Close

Troubleshooting

Before you call for service, determine the symptoms and make a few simple checks as shown below.

Symptoms	Checks	Page
Power does not turn ON	<ul style="list-style-type: none"> Is the power plug plugged in? 	21
Lamp does not light up.	<ul style="list-style-type: none"> If the Lamp will not light after turning on the power 2 or 3 times, the Lamp may be damaged. Please consult your nearest dealer. 	-
The power turns OFF The POWER indicator flashes orange twice every 5 seconds. The TEMP indicator flashes 2 or 4 times every 5 seconds. The TEMP indicator flashes 5 times every 5 seconds. Power turns off while another indicator is flashing.	<ul style="list-style-type: none"> The lamp cover is ajar. Firmly replace the cover. Check whether or not the vents are clogged. Is the set being used in a location that is hot? Please clean the Air Filter. Please consult your nearest dealer. 	60 - - 58 -
Remote control does not function	<ul style="list-style-type: none"> Are the batteries dead or inserted incorrectly? Is the remote control sensor in direct light of fluorescent lamps or other strong sources of light? Did you correctly set the remote control code? 	7 - 61
Image shakes Image is not clear Color patches or no color	<ul style="list-style-type: none"> Is the antenna or antenna cable old, broken or shorted? Is the antenna cable connected properly? When using a VCR and selecting channels on the TV, is the TV/VIDEO mode for the VCR set to TV? 	- 12-14 -
Image appears doubled or tripled.	<ul style="list-style-type: none"> Is the antenna facing the right direction? Is the antenna receiving any signals reflected off of mountains or buildings. 	- -
Images disappear at the top and bottom of the screen	<ul style="list-style-type: none"> When using 16:9 image software, there is no picture at the top and bottom of the screen (cinema vision size software, etc.). 	-
During ZOOM modes, the image is cut off at the top and bottom.	<ul style="list-style-type: none"> Has the screen position been changed? If so, adjust screen positioning. 	30,31,40,41
The projection display set makes a high whistling sound when the power is ON.	<ul style="list-style-type: none"> This is the sound of the internal starting UP. This is not a malfunction. 	-
Some parts of the screen are always lit while others do not light up. Some parts of the screen do not light up.	<ul style="list-style-type: none"> This is a characteristic of the LCD panel and not a malfunction. 	-
Fan is operating even though TV Power is OFF.	<ul style="list-style-type: none"> This is because the cooling fan is operating. The fan will stop after about 1 minute. 	21
An OSD instructing to clean the filter is displayed.	<ul style="list-style-type: none"> After cleaning the filter, select YES. 	58
An OSD instructing to replace the lamp is displayed. (The LAMP indicator is lit red.)	<ul style="list-style-type: none"> Replace lamp with a new one. 	60
Relighting the lamp when it is hot makes a sound.	<ul style="list-style-type: none"> This is a characteristic of the lamp and not a malfunction. 	-
Leaving stationary images, such as still video images, web pages, or filler bars (used for NORMAL aspect mode), on-screen for an extended period of time can leave ghost images on the screen.	<ul style="list-style-type: none"> This is a characteristic of the LCD panel and not a malfunction. Try displaying constantly moving pictures which fill the entire screen, or turn the power OFF for a while to return the screen to normal. 	-

Specifications

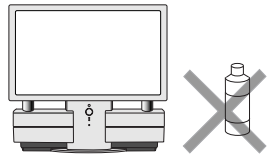
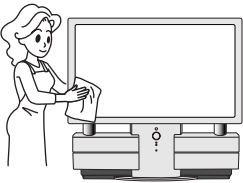
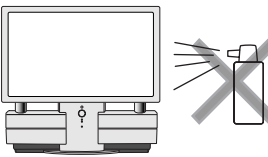

	PT-40LC12		PT-45LC12	
Power Source	AC 120 V, 60 Hz			
Power Consumption	Power ON: Approx. 280 W Power OFF: Approx. 3 W (when cooling fan is stopped)			
LCD panels	0.9” Poly silicon TFT LCD panel X 3 921 600 (1 280 X 720) stripe pixels X 3 panels (16:9)			
Display	40-inch, 16 : 9 aspect ratio		45-inch, 16 : 9 aspect ratio	
Speaker	2 Speakers 20 W [10 W + 10 W] (10 % THD)			
HID Lamp	150 W HID (High Intensity Discharge) Lamp			
Channel Capability	VHF-12 : UHF-56 : Cable-113			
Input Terminals	RGB INPUT	RGB analog AUDIO	0.7 Vp-p (75 Ω) 0.5 Vrms	(D-SUB15P) (M3 Stereo mini Pin Jack)
	AV INPUT 1- 3	VIDEO S-VIDEO	1.0 Vp-p (75 Ω) Y : 1 Vp-p (75 Ω), C : 0.286 Vp-p (75 Ω)	(RCA Pin Jack) (Mini DIN 4pin)
		AUDIO L-R	0.5 Vrms	(RCA Pin Jack x 2)
	COMPONENT VIDEO INPUT 1-2	Y P _B / P _R AUDIO L-R	1.0 Vp-p (with sync)(75 Ω) ± 0.35 Vp-p(75 Ω) 0.5 Vrms	(Pin Jack x 2) (RCA Pin Jack x 2)
Output signals	AV OUT	VIDEO S-VIDEO	1.0 Vp-p (75 Ω) Y : 1 Vp-p (75 Ω), C : 0.286 Vp-p (75 Ω)	(RCA Pin Jack) (Mini DIN 4pin)
		AUDIO L-R	0.5 Vrms	(RCA Pin Jack x 2)
Dimensions (W x H x D)	970 mm (W) x 898 mm (H) x 415 mm (D) 38-3/16” (W) x 35-3/8” (H) x 16-5/16” (D)		1 081 mm (W) x 978 mm (H) x 415 mm (D) 42-9/16” (W) x 38-1/2” (H) x 16-5/16” (D)	
Weight (Mass)	42 kg (92.6 lbs.) Net		44 kg (97.0 lbs.) Net	
Operating conditions	Temperature : 0 °C – 40 °C (34 °F - 104 °F) Humidity : 20 % - 80 % (non-condensing)			

Note:

Design and Specifications are subject to change without notice. Weight and Dimensions shown are approximate.

Cleaning

To ensure continued excellent performance by this product, periodic cleaning is recommended.

	<p>The unit contains many plastic parts. For this reason DO NOT use benzine, thinner or other chemicals to clean the unit.</p>		<p>Dust will accumulate on the picture screen. Please wipe with a soft cloth from time to time. If you use a chemically treated cloth, please be careful to follow the instructions that come with the cloth.</p>
	<p>DO NOT bring into contact with insecticide or other volatile substances. DO NOT allow the unit to come into contact for extended periods with rubber or vinyl products.</p>		<p>Remove dirt and soiling by wiping with a light cloth. Even if the unit is heavily soiled, do not apply cleaner directly to the unit. Soak a cloth in a solution of neutral cleanser diluted with water. Then wring out the cloth, wipe the unit clean, and finish by wiping with a dry cloth. Do not use any type of cleansers on the picture screen.</p>

Customer Services Directory

For Product Information, Operating Assistance, Literature Request, Dealer Locations, and all Customer Service inquiries please contact:
1-888-VIEW-PTV (1-888-843-9788), Monday-Friday 9am - 9pm; Saturday-Sunday 9am - 7pm, EST.

Web Site: <http://www.panasonic.com>
You can purchase parts, accessories or locate your nearest servicenter by visiting our Web Site.

Accessory Purchases:

1-800-332-5368 (Customer Orders Only)
Panasonic Services Company 20421 84th Avenue South, Kent, WA 98032
(6 am to 5 pm Monday - Friday; 6 am to 10:30 am Saturday; PST)
(Visa, MasterCard, Discover Card, American Express, Check)

Service in Puerto Rico
Matsushita Electric of Puerto Rico, Inc. Panasonic Sales Company/Factory Servicenter:
Ave. 65 de Infanteria, Km. 9.5, San Gabriel Industrial Park, Carolina, Puerto Rico 00985
Phone (787) 750-4300 Fax (787) 768-2910

As of March 2002

Limited Warranty

PANASONIC CONSUMER
ELECTRONICS COMPANY, DIVISION
OF MATSUSHITA ELECTRIC
CORPORATION OF AMERICA
One Panasonic Way
Secaucus, New Jersey 07094

PANASONIC SALES COMPANY,
DIVISION OF MATSUSHITA
ELECTRIC OF PUERTO RICO, INC.,
Ave. 65 de Infantería, Km. 9.5
San Gabriel Industrial Park, Carolina,
Puerto Rico 00985

Panasonic Multi-Media Projection Display Limited Warranty

Limited Warranty Coverage

If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company or Panasonic Sales Company (collectively referred to as "the warrantor") will, for the length of the period indicated on the chart below, which starts with the date of original purchase ("warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

CATEGORY	PARTS	LABOR	SERVICE
Multi-Media Projection Display	One (1) Year	One (1) Year	In-Home or Carry-In

During the "Labor" warranty period there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must carry-in your product or arrange for in-home service during the warranty period. If non-rechargeable batteries are included, they are not warranted. This warranty only applies to products purchased and serviced in the United States or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold "as is". A purchase receipt or other proof of the original purchase date is required for warranty service.

Carry-in or In-Home Service

For In-Home or Carry-In Service in the United States call 1-888-VIEW-PTV (1-888-843-9788).
For assistance in Puerto Rico call Panasonic Sales Company (787)-750-4300 or fax (787)-768-2910.

In-Home service requires clear, complete and easy access to the product by the authorized servicer and does not include removal or re-installation of an installed product. It is possible that certain in-home repairs will not be completed in-home, but will require that the product, or parts of the product, be removed for shop diagnosis and/or repair and then returned.

Limited Warranty Limits And Exclusions

This warranty **ONLY COVERS** failures due to defects in materials or workmanship, and **DOES NOT COVER** normal wear and tear or cosmetic damage. The warranty also does not cover damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper cleaning of or failure to clean the air filter, power line surge, lightning damage, modification, or commercial use (such as in a hotel, office, restaurant, or other business), rental use of the product, service by anyone other than a Factory Servicenter or other Authorized Servicer, or damage that is attributable to acts of God.

THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, or travel to and from the servicer. The items listed are not exclusive, but are for illustration only.) **ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.**

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the exclusions may not apply to you.

This warranty gives you specific legal rights and you may also have other rights, which vary, from state to state. If a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the warrantor's Consumer Affairs Department at the addresses listed for the warrantor.

PARTS AND SERVICE (INCLUDING COST OF AN IN-HOME SERVICE CALL, WHERE APPLICABLE) WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY ARE YOUR RESPONSIBILITY.

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Customer' Record

The serial number of this product can be found on its back cover. You should note this serial number in the space provided below and retain this book, plus your purchase receipt, as a permanent record of your purchase to aid in identification in the event of theft or loss, and for Warranty Service purposes.

Model Number PT-40LC12/PT-45LC12


Serial Number

**Panasonic Consumer Electronics Company, Division of
Matsushita Electric Corporation of America**
One Panasonic Way Secaucus New Jersey 07094

**Panasonic Sales Company, Division of Matsushita Electric of
Puerto Rico Inc. ("PSC")**
Ave. 65 de Infanteria, Km 9.5 San Gabriel Industrial Park,
Carolina, Puerto Rico 00985

Printed in U.S.A
LSQT0583A
S0402-0

1. Important safety notice

Components identified by the sign  have special characteristics important for safety. When replacing any of these components. Use only the specified parts.

2. Do not use the part number shown on this drawing for ordering.

The correct part number and part value is shown in the parts list, and may be slightly different or amended since this drawing was prepared.

3. Use only original replacement parts:

To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Parts different in shape or size may be used.

However, only interchangeable parts will be supplied as service replacement parts.

5. Test point information

● : Test point with a jumper wire across a hole in P.C.B.

○ : Test point with no test pin.

Schematic Diagram Notes

1. Indication for Zener Voltage of Zener Diodes

The Zener Voltage of Zener Diodes are indicated as such on Schematic Diagrams.

Example:

(6.2V).....Zener Voltage

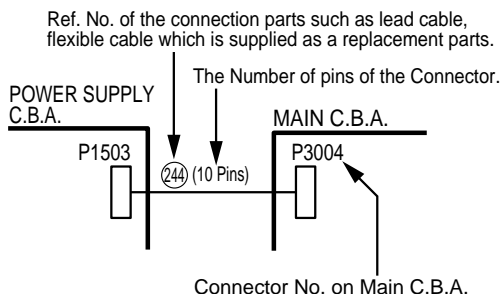
2. How to identify Connectors

Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to, in other words, its counter part.

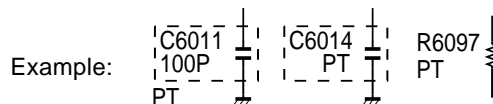
Use the interconnection schematic diagram to find the connection between associated connectors.

Example:

The connections between C.B.A.s are shown below.



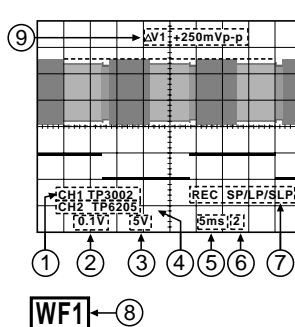
3. Parts marked "PT" are not used in any models included in this service model.



4. Jumper wires are used for WA10, WA5 etc and these are not supplied as replacement parts.

Signal Waveform Note

How to read Signal Waveform



- ① Connecting Point
- ② Volts/Div
- ③ Volts/Div
- ④ Connecting Point
- ⑤ Time/Div
- ⑥ Trigger Channel of the scope
(1:CH1,2:CH2)
- ⑦ Operation Mode of VCR
- ⑧ Waveform Point on Schematic
- ⑨ ΔV1:Peak to Peak

Circuit Board Layout Note


Circuit Board Layout shows components installed for various models.

For proper parts content for the model you are servicing, please refer to the schematic diagram and parts list.

NOTE:

Circuit Board Layout includes components which are not used.

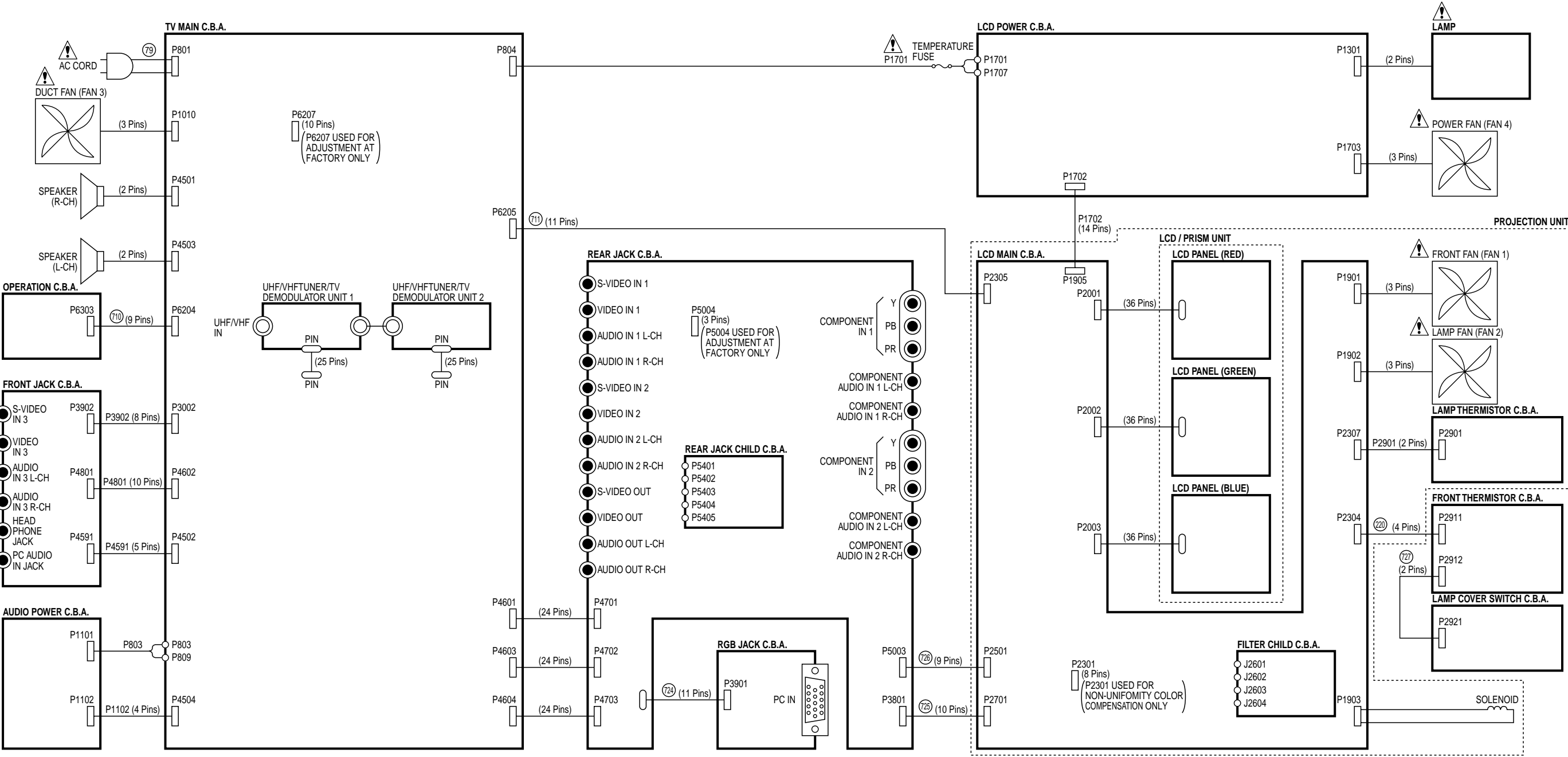
INTERCONNECTION SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN  HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

NOTE:
LCD POWER C.B.A. IS SUPPLIED AS A UNIT ONLY.
PLEASE NOTE THAT INDIVIDUAL PARTS ON IT ARE NOT SUPPLIED.
HOWEVER, THE PARTS WITH REF. No. ARE AVAILABLE SEPARATELY
AS REPLACEMENT PARTS.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE NUMBER LSJA0411 (115 °C).
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D'INCENDIE N' UTILISERQUE DES FUSIBLE DE MEME
TYPE NUMÉRO LSJA0411 (115 °C)

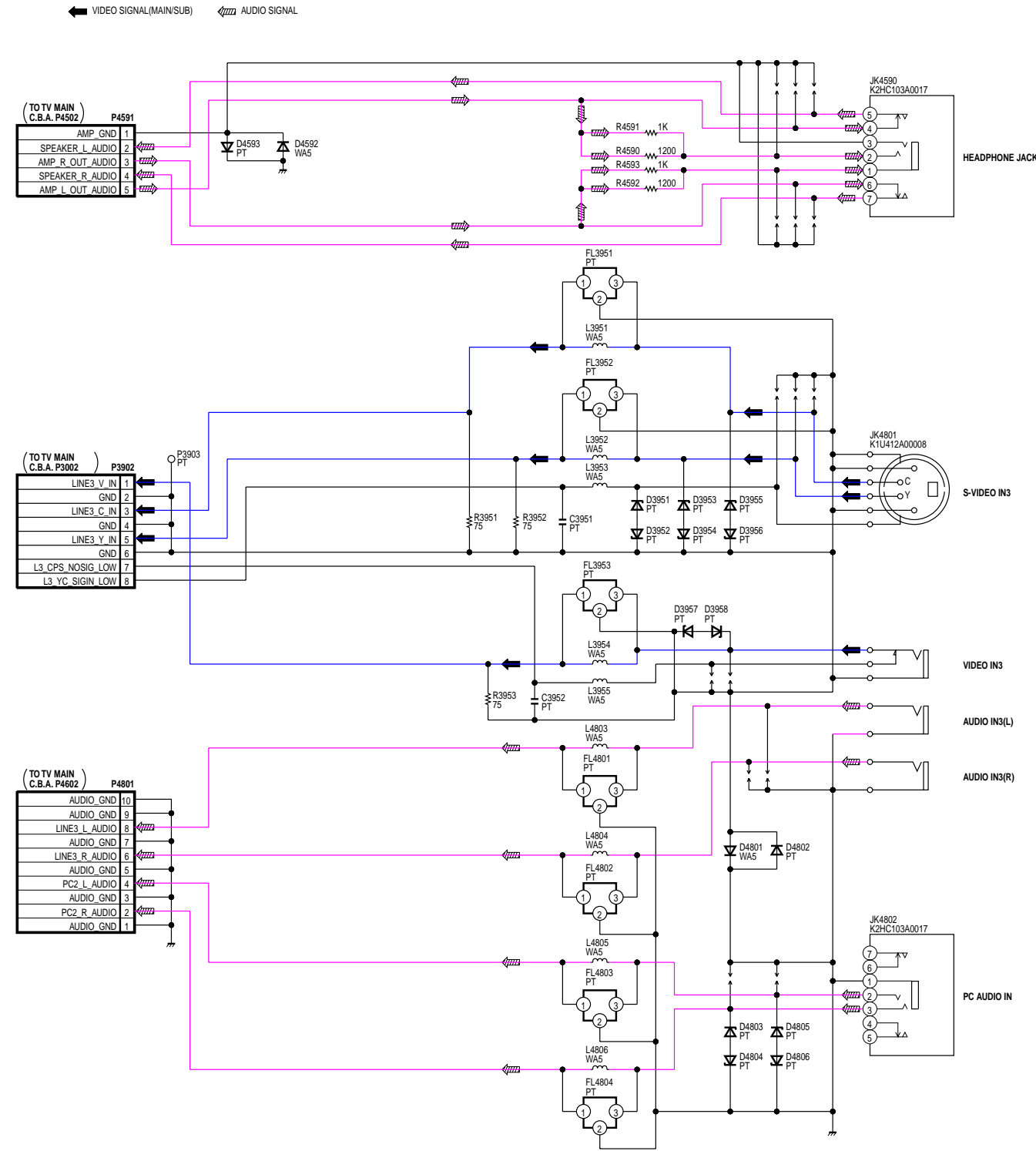


FRONT JACK SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

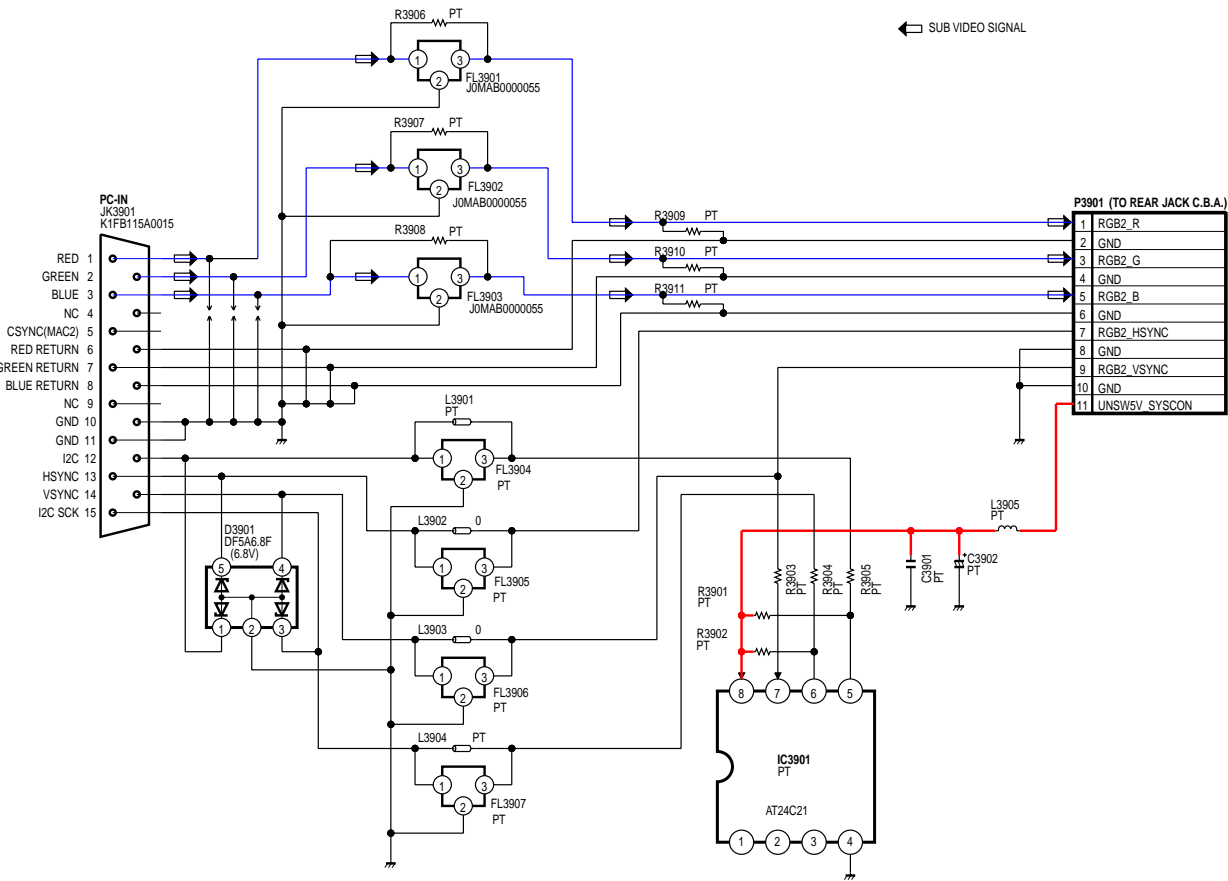


RGB JACK SCHEMATIC DIAGRAM

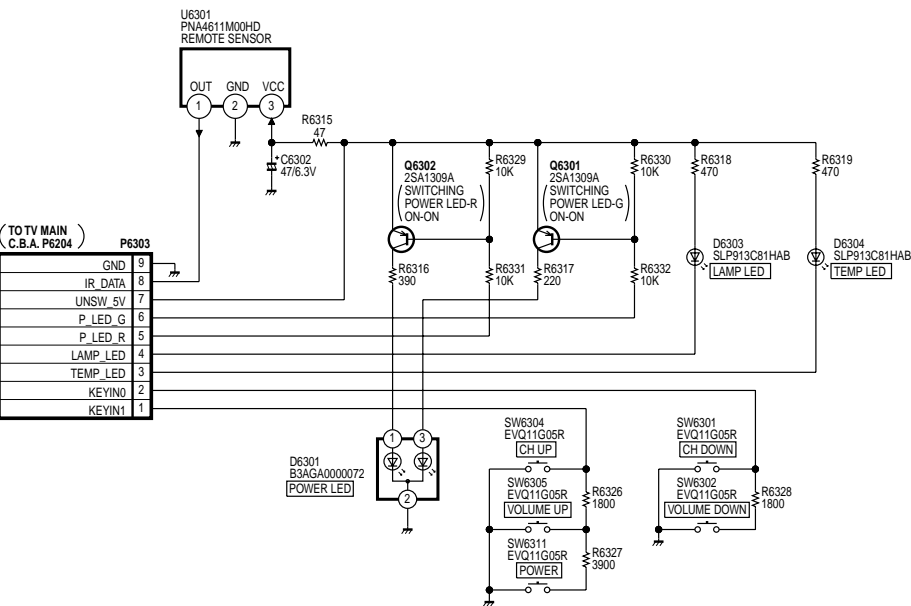
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.



OPERATION SCHEMATIC DIAGRAM

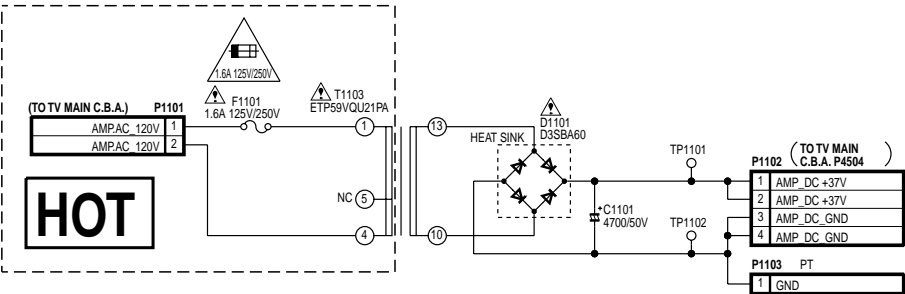


AUDIO POWER SCHEMATIC DIAGRAM

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÊME
TYPE 1.6A 125/250V



HOT CIRCUIT. BE CAREFUL AND USE AN
ISOLATION TRANSFORMER WHEN SERVICING.



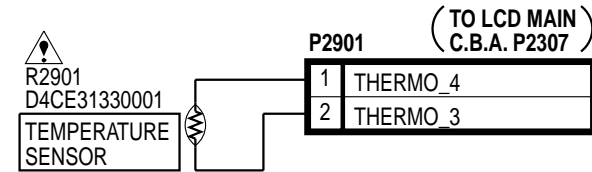
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT" ARE NOT USED.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

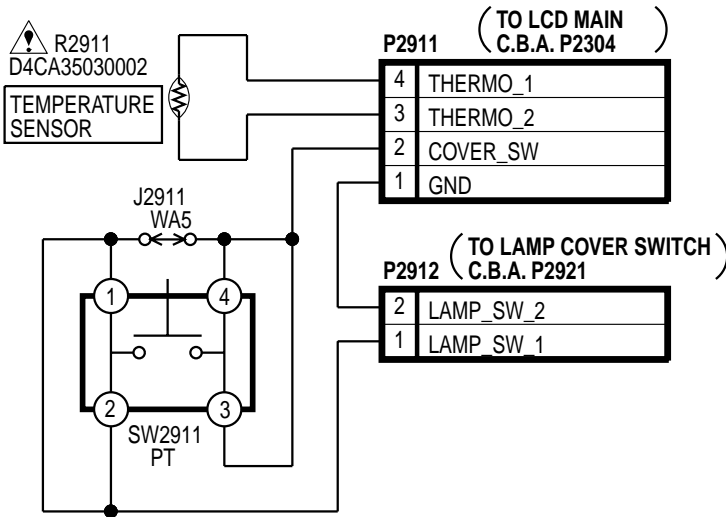
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

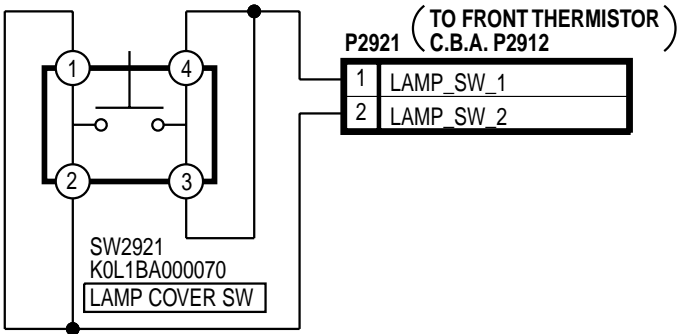
LAMP THERMISTOR SCHEMATIC DIAGRAM



FRONT THERMISTOR SCHEMATIC DIAGRAM




LAMP COVER SWITCH SCHEMATIC DIAGRAM



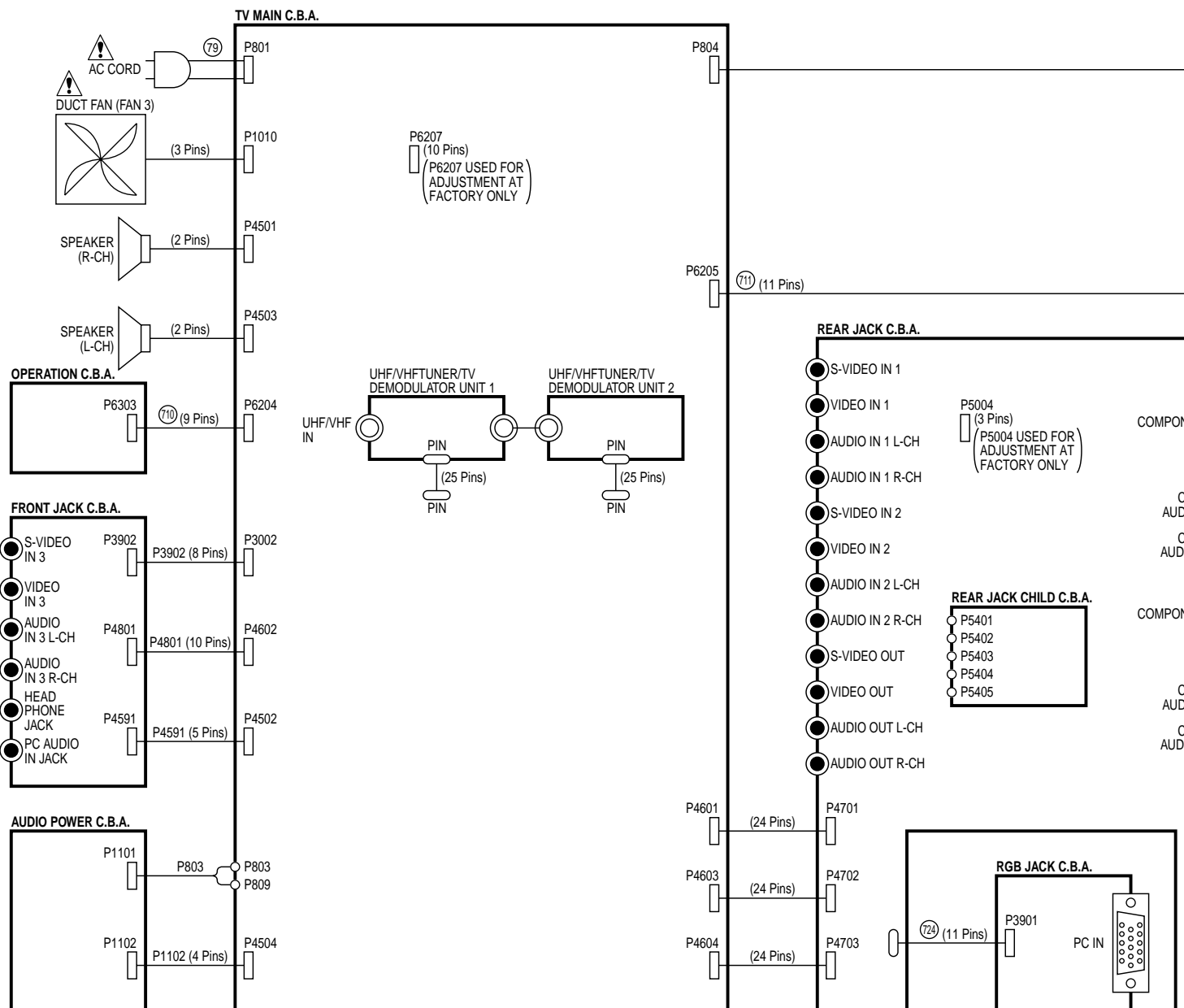
LSJB3065
AUDIO POWER SCHEMATIC DIAGRAM
LSJB3080
LAMP THERMISTOR C.B.A.
LSJB3081
FRONT THERMISTOR C.B.A.
LSJB3082
LAMP COVER SWITCH C.B.A.
PT-40LC12/PT-45LC12


9.2. INTERCONNECTION SCHEMATIC DIAGRAM

INTERCONNECTION SCHEMATIC DIAGRAM

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN  SPECIAL CHARACTERISTICS IMPORTANT FOR THE USER.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE, REPLACE ONLY WITH THE SAME TYPE NUMBER.
ATTENTION: POUR UNE PROTECTION CONTINUE CONTRE L'INCENDIE, N'UTILISER QUE DES FUSIBLES DU MÊME TYPE NUMÉRO LSJA0411 (115 °C)

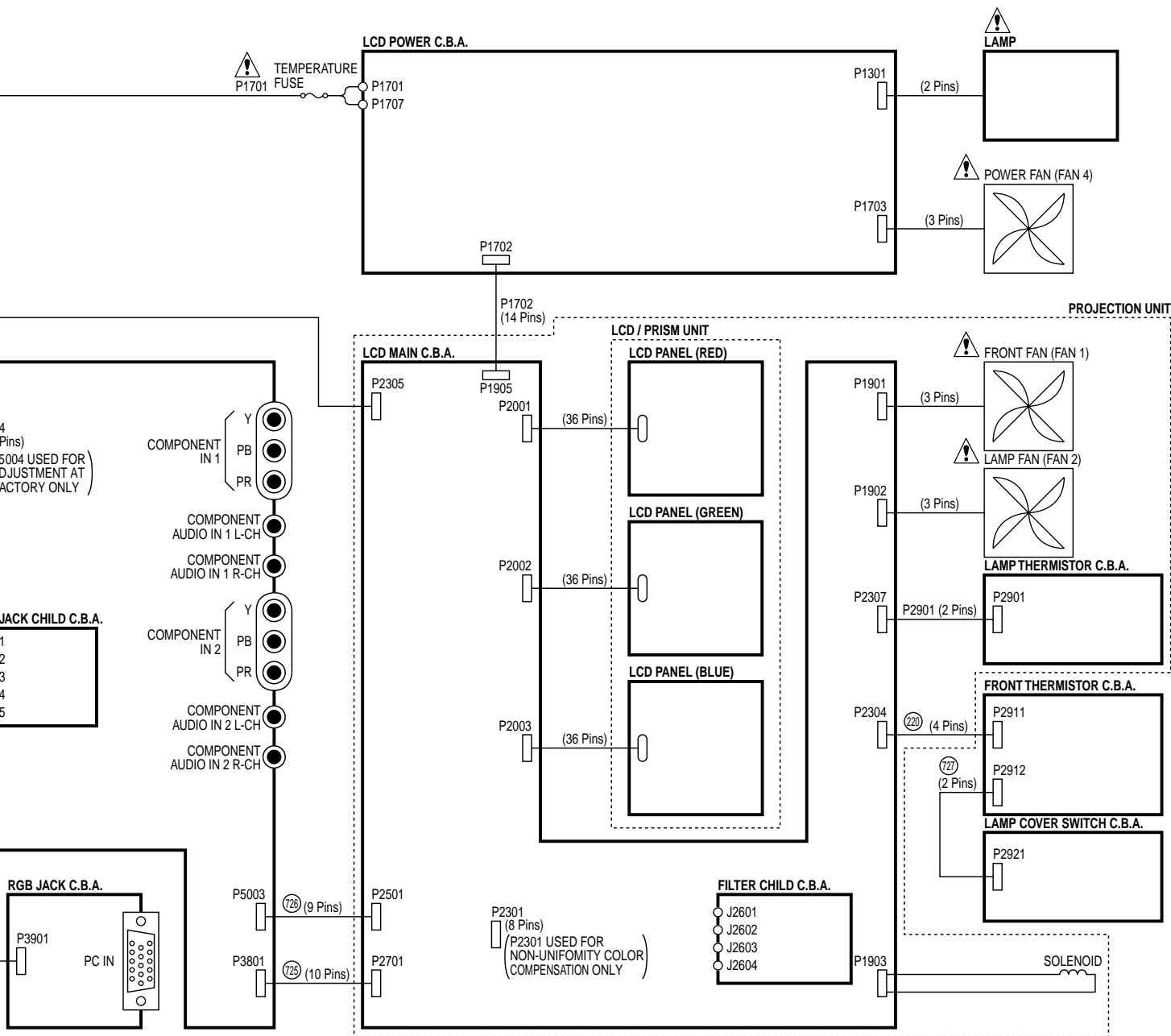


SAFETY NOTICE:
 PARTS IDENTIFIED BY THE SIGN  HAVE
 CHARACTERISTICS IMPORTANT FOR SAFETY.
 REPLACING ANY OF THESE COMPONENTS,
 WITHOUT THE SPECIFIED PARTS.

NOTE:
 LCD POWER C.B.A. IS SUPPLIED AS A UNIT ONLY.
 PLEASE NOTE THAT INDIVIDUAL PARTS ON IT ARE NOT SUPPLIED.
 HOWEVER, THE PARTS WITH REF. No. ARE AVAILABLE SEPARATELY
 AS REPLACEMENT PARTS.

NOTE:
 FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
 REFER TO BEGINNING OF SCHEMATIC SECTION.

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
 ONLY WITH THE SAME TYPE NUMBER LSJA0411 (115 °C).
 POUR UNE PROTECTION CONTINUE LES RISQUES
 N'UTILISER QUE DES FUSIBLE DE MÊME
 TYPE LSJA0411 (115 °C)

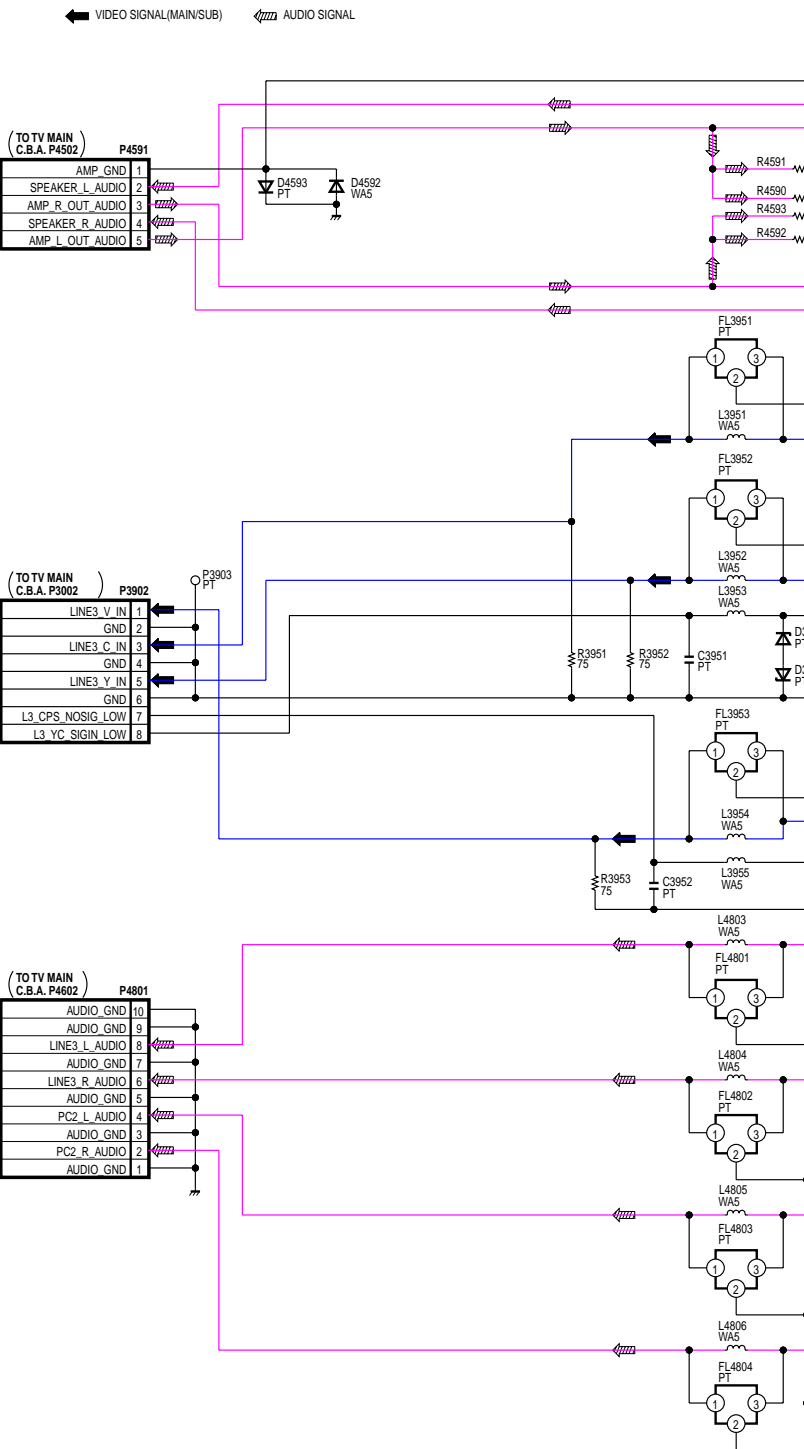


INTERCONNECTION SCHEMATIC DIAGRAM
PT-40LC12/PT-45LC12

9.3. FRONT JACK SCHEMATIC DIAGRAM

FRONT JACK SCHEMATIC DIAGRAM

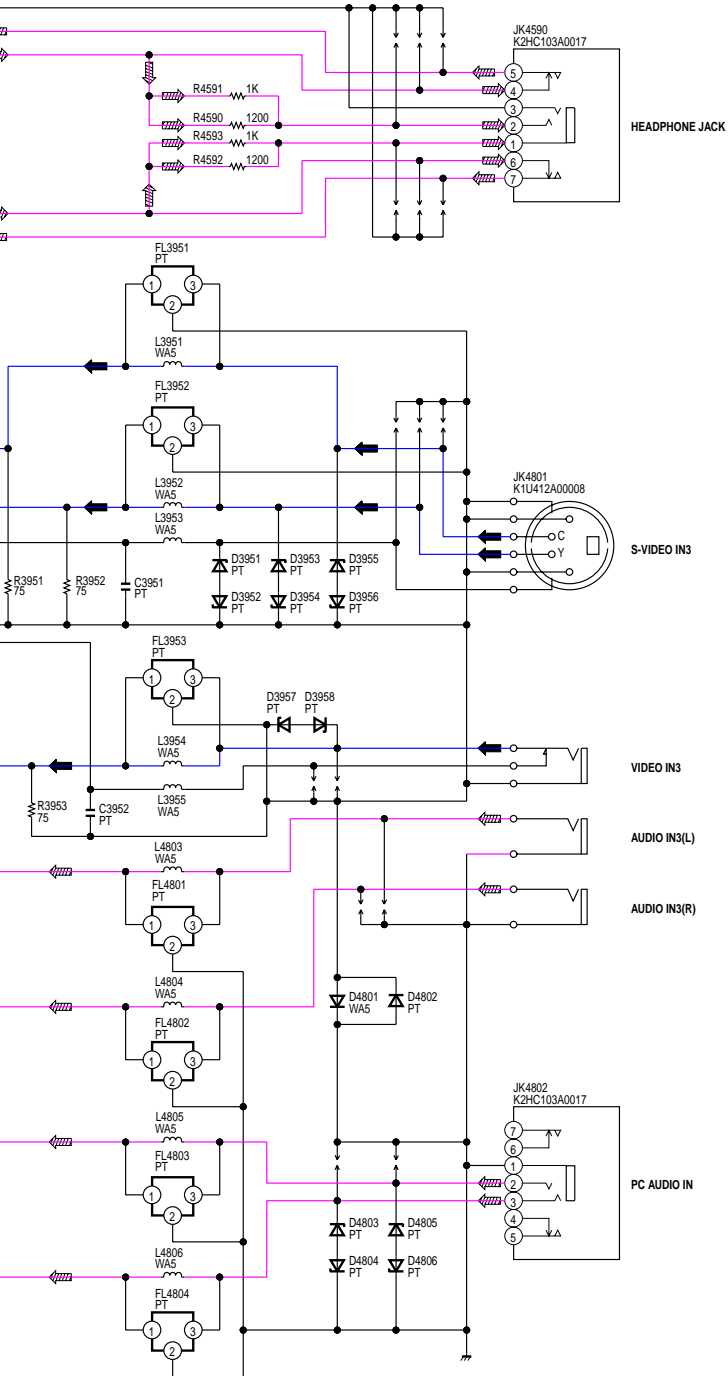
NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT"



DASHED LINES MARKED "PT" ARE NOT USED.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

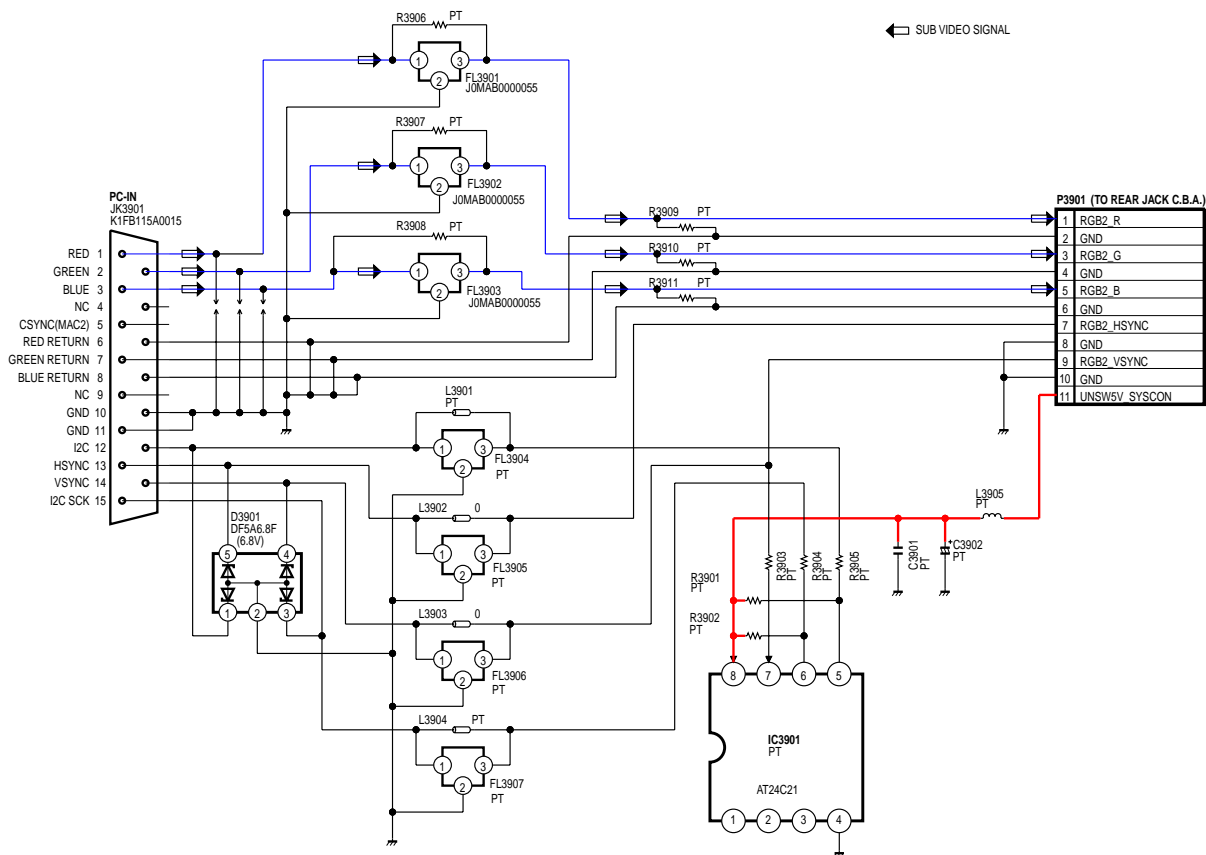


LSJB3068
FRONT JACK SCHEMATIC DIAGRAM
PT-40LC12/PT-45LC12

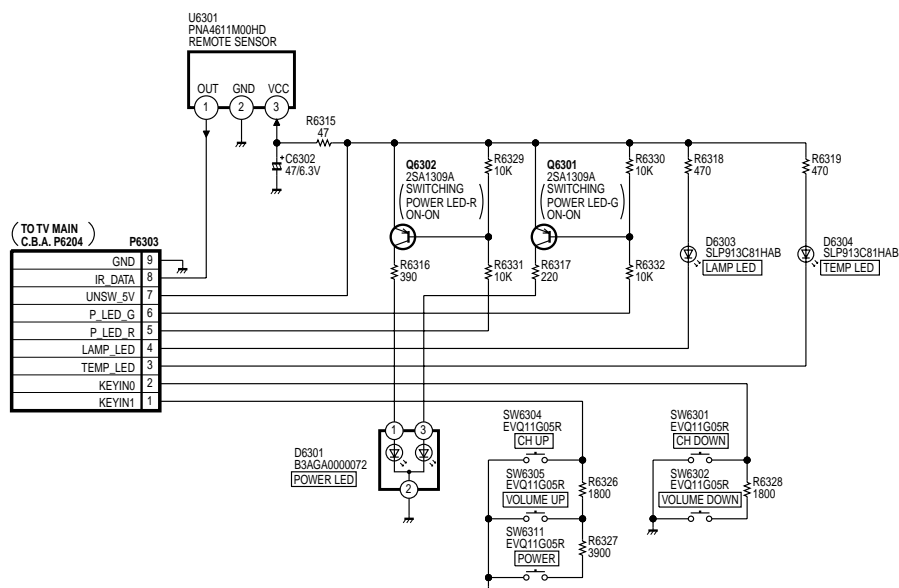
9.4. RGB JACK / OPERATION SCHEMATIC DIAGRAMS

RGB JACK SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT"



OPERATION SCHEMATIC DIAGRAM



[illegible]

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

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9.5. AUDIO POWER / LAMP THERMISTOR / FRONT THERMISTOR / LAMP COVER

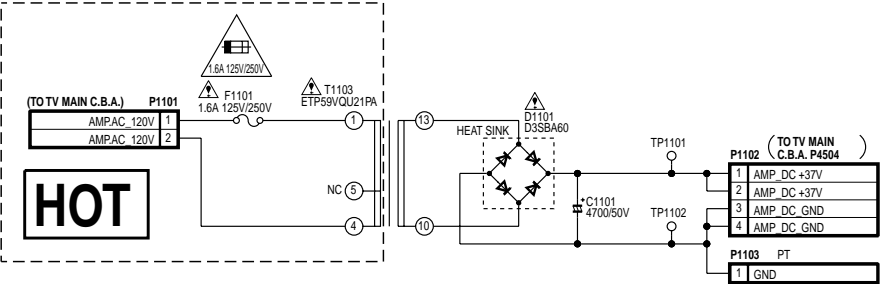
AUDIO POWER SCHEMATIC DIAGRAM

NOTE:
PARTS ENCLOSED IN DASHED LINES MARKED "PT"

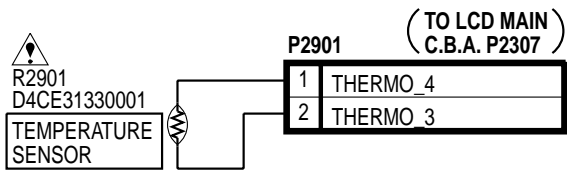
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE 1.6A 125/250V FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES
D' INCENDIE N' UTILISERQUE DES FUSIBLE DE MÊME
TYPE 1.6A 125/250V



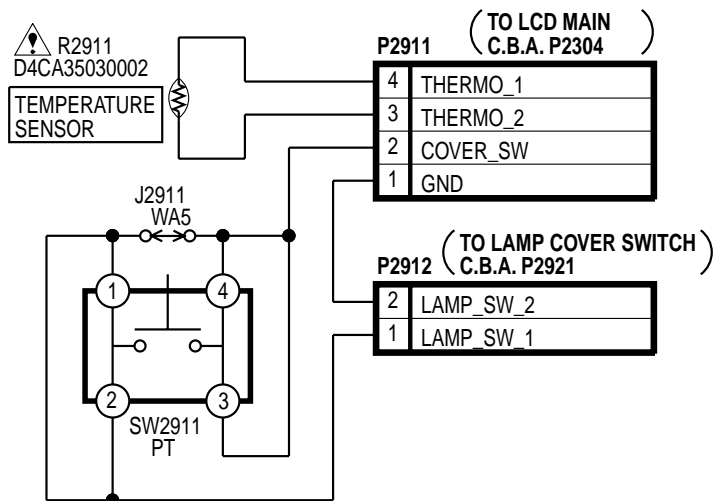
HOT CIRCUIT. BE CAREFUL AND USE AN
ISOLATION TRANSFORMER WHEN SERVICING.



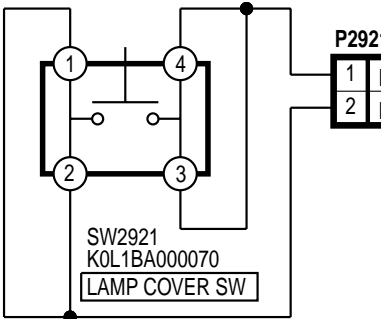
LAMP THERMISTOR SCHEMATIC DIAGRAM



FRONT THERMISTOR SCHEMATIC DIAGRAM



LAMP COVER SWITCH SCHEMATIC DIAGRAM




LAMP COVER SWITCH SCHEMATIC DIAGRAMS

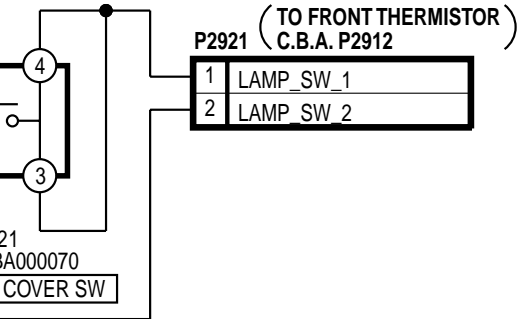
DASHED LINES MARKED "PT" ARE NOT USED.

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED BY THE SIGN  HAVE
SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS,
USE ONLY THE SPECIFIED PARTS.

R SWITCH SCHEMATIC DIAGRAM

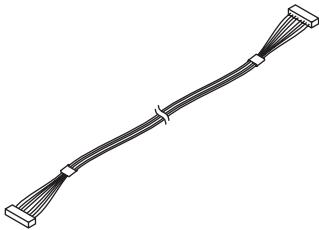


LSJB3065
AUDIO POWER SCHEMATIC DIAGRAM
LSJB3080
LAMP THERMISTOR C.B.A.
LSJB3081
FRONT THERMISTOR C.B.A.
LSJB3082
LAMP COVER SWITCH C.B.A.
PT-40LC12/PT-45LC12

SERVICE FIXTURES AND TOOLS

LSUA0035

Extension Cable



Note:
This Extension Cable is used only in the location shown in Fig. 11-3 of "Checking position for the TV Main C.B.A. and the Rear Jack C.B.A."

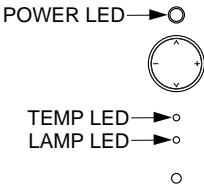
LSYF0532

Filter tool



LED INDICATIONS FOR ERROR CONDITION

Each LED indication facilitates finding the cause of the error.
When an error is detected, each LED on the Center Panel will light up or flash when the AC Cord is plugged in.
The detected error data will not be stored in the EEPROM. This data is cleared after the AC Cord is unplugged.



<Center Panel of the unit>

Fig. 2-1

Error No.	Error Information	ERROR DESCRIPTION	POWER LED	TEMP LED	LAMP LED	OSD	LAMP OFF
1)	Front Fan stop or Lamp Fan stop	IC2301(pin12) detects the Front FAN stop or Lamp FAN stop, then indicates the error when the Front FAN or Lamp FAN is stopped.	flashes orange once every 5 seconds	-	-		○
2)	Lamp Cover open	IC2301(pin76) detects the Lamp Cover Unit condition (open or close), then indicates the error when the Lamp Cover Unit is open.	flashes orange twice every 5 seconds	-	-		○
3)	Temperature Sensor short or open	IC2301(pin74 and 75) detects open or short of the Temperature Sensor (R2911) on Front Thermistor C.B.A., then indicates the error when Temperature Sensor is open or shorted. (The error is not detected for 1 minute after Lamp ON.)	-	flashes once every 5 seconds	-		○
4)	Abnormal Temperature	IC2301(pin74 and 75) detects the temperature attached near the Front FAN by the Temperature Sensor (R2911) on Front Thermistor C.B.A., then indicates the error when the temperature becomes more than 43°C. (The error is not detected for 1 minute after Lamp ON.)	-	flashes twice every 5 seconds	-		○
5)	Power Ballast Error (abnormal Lamp voltage)	IC2301(pin11) detects the error of the Lamp, then indicates the error when the Lamp is short-circuit.	-	-	flashes twice every 5 seconds		○
6)	Power Ballast Error (abnormal temperature)	IC2301(pin11) detects the error of LCD Power C.B.A., then indicates the error when the temperature fuse (117°C) in LCD Power C.B.A. is open.	-	-	flashes 3 times every 5 seconds		○
7)	Power Ballast Error (other causes)	IC2301(pin11) detects the error of LCD Power C.B.A. and Lamp, then indicates the error when an inner malfunction of LCD Power C.B.A. occurs, the Lamp voltage becomes more than 130V or less than 30V, Lamp current becomes more than 5A, or the Lamp is cracked.	-	-	flashes 4 times every 5 seconds		○
8)	Abnormal Voltage on 16 V line of LCD Main C.B.A.	IC2301(pin48) detects +16V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +13V.	-	flashes once every 5 seconds	flashes once every 5 seconds		
9)	Abnormal Voltage on 14 V line of LCD Main C.B.A.	IC2301(pin47) detects +14V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +11V.	-	flashes twice every 5 seconds	flashes twice every 5 seconds		
10)	Abnormal Voltage on 7 V line of LCD Main C.B.A.	IC2301(pin45) detects +7V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +5.7V.	-	flashes 3 times every 5 seconds	flashes 3 times every 5 seconds		
11)	Abnormal Voltage on 3.3 V line of LCD Main C.B.A.	IC2301(pin44) detects +3.3V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +2.5V.	-	flashes 4 times every 5 seconds	flashes 4 times every 5 seconds		
12)	Temperature Sensor short or open	IC6001(pin86 and 87) detects open or short of the Temperature Sensor (R2901) on Lamp Thermistor C.B.A., then indicates the error when Temperature Sensor is open or shorted. (The error is not detected for 4 minutes after Lamp ON.)	-	flashes 3 times every 5 seconds	-		○
13)	Abnormal Temperature	IC2301(pin74 and 75) detects the temperature attached near the Lamp by the Temperature Sensor (R2901) on Lamp Thermistor C.B.A., then indicates the error when the temperature becomes more than 60°C. (The error is not detected for 4 minutes after Lamp ON.)	-	flashes 4 times every 5 seconds	-		○
14)	Duct Fan stop	IC6001(pin85) detects the Duct FAN stop, then indicates the error when the Duct FAN is stopped.	flashes orange 3 times every 5 seconds	-	-		○
15)	Clogged air filter more than 90%	IC2301(pin82) detects the clogged air filter, then indicates the error when the air filter is clogged 90%.	-	flashes 5 times every 5 seconds	-	○	○
16)	The failure of Lamp light up	IC2301 (pin11) detects the failure of light up processing of the Lamp, then the POWER LED is changed as follows. 1) POWER LED flashes green for 140 seconds (while turning on). 2) POWER LED flashes red for 60 seconds (while cooling). 3) POWER LED lights up red (standby). Note: If the Lamp will not light after attempting turning on the power 2 or 3 times, the Lamp, the LCD Power C.B.A. or the LCD Main C.B.A. may be defective.	flashes green for 140 seconds. ↓ flashing red for 60 seconds. ↓ light up red.				
17)	Request for Lamp Replacement	When accumulated operation time of the Lamp reaches 5000 hours, OSD (replacing the Lamp) appears on the screen. Note: The Lamp time is stored in EEPROM (IC2305).	-	-	lights up	○	
18)	Request for Filter Cleaning	When accumulated operation time of the Air Filter reaches 400 hours, OSD (cleaning the Air Filter) appears on the screen. Note: The Filter time is stored in EEPROM (IC2305).	-	-	-	○	
—	Forced cooling	During forced cooling, this indication is indicated.	flashes red for 10 minutes	-	flashes 5 times every 5 seconds		

- Note:**
1. When any of the above errors has occurred, the LED will flash as shown above every 5 seconds.
 2. When two or more errors have occurred at the same time, the LED will light up or flash as shown above, and then change to another every 5 seconds in turn.
 3. LAMP OFF: The LED will flash right after the Lamp goes off.
 4. Warning OSD appears when the Air Filter is clogged 90%, accumulated operation time of the Lamp reaches 5000 hours, or accumulated operation time of the Air Filter reaches 400 hours.
 5. IC2301 is mounted on LCD Main C.B.A. which includes in the Projection Unit.
 6. IC6001 is mounted on TV Main C.B.A.

Fig. 2-2

SERVICE CAUTION

THE LAMP COVER SWITCH AND THE FRONT THERMISTOR CAUTIONS

When servicing, be sure to install the following parts. Otherwise, the unit power will not turn on.

1. Connect the cable between Connector P2911 on the Front Thermistor C.B.A. and Connector P2304 on the LCD Main C.B.A.

Note:

When opening the Base Front Panel Unit as shown:

- Remove the sheet from cable on the Projection Unit to connect the cable.
 - Set the Front Cover L and the Front Cover R Unit (or similar thickness) under the Base Front Panel Unit so as not to put excessive pressure to the connectors on the TV Main C.B.A. as shown.
2. Install the Lamp Cover securely (Lamp Cover Switch is ON).

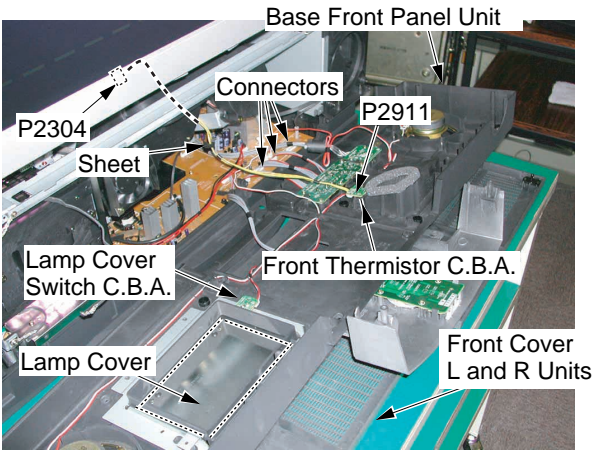


Fig. 3-1

COVERING THE FRONT FAN CAUTION

Warning:
The unit MUST NOT be operated without an Air Filter!!

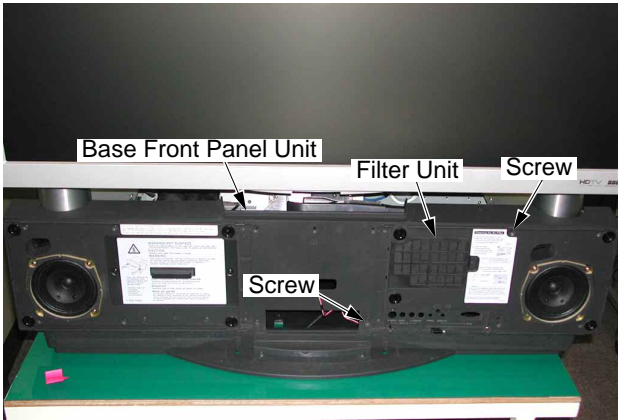
When servicing, cover the Front Fan with the Filter as follows. Otherwise, the Projection unit will be damaged by dust, etc.

Method-1 (Install the Base Front Panel Unit with the Filter Unit securely)

When servicing, install the Base Front Panel Unit (with the Filter Unit), and tighten at least 2 Screws on the Base Front Panel Unit as shown below so that the Front Fan (Intake fan) is covered securely with the Filter.

Method-2 (Use Filter tool)

Install the Filter tool (LSYF0532) on the Front Fan. Refer to "HOW TO INSTALL THE FILTER TOOL."



<Front View>

Fig. 3-2

DO NOT UNPLUG AC CORD DURING COOLING OPERATION

The lamp cooling fan will continue to operate for approximately 1 minute after the power is turned off.

At the same time, the POWER LED will flash red.

Do not disconnect the AC Cord from the power outlet and do not open any circuit breakers while the cooling fan is still operating.

HOW TO INSTALL THE FILTER TOOL

- 1. Put the Filter tool on the Front Fan as shown.
- 2. Press at the center of the Filter tool and release.
(Click sound can be heard when the inside portions of the Filter tool hook to the inside edge of the Front Fan.)

Filter tool (LSYF0532)

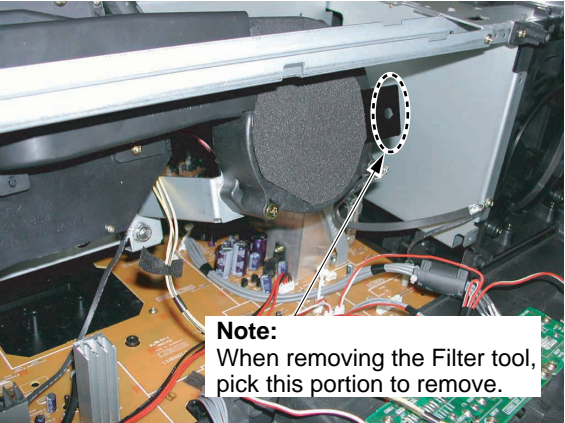
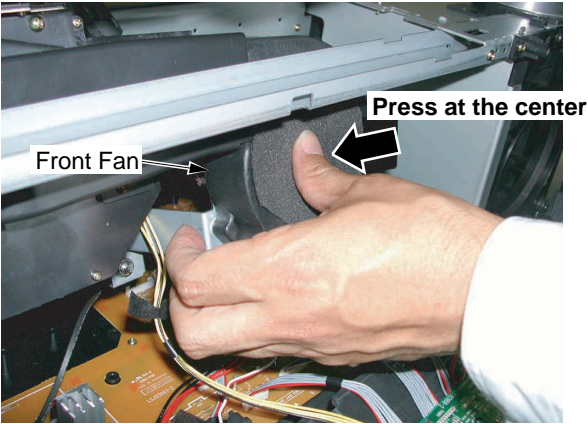
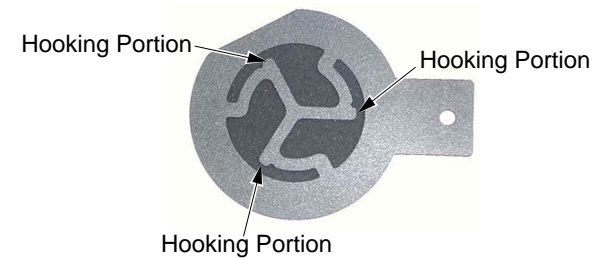


Fig. 3-3

BEFORE REMOVING THE PROJECTION UNIT FROM THE UNIT AT THE USER'S LOCATION

CAUTION:

1. **Be sure to make a note of the LAMP RUN TIME (value A) in Service Mode (LCD Main C.B.A. (1)):**

SERVICE MODE RESET	1	←*1
TOTAL TIME		
130W	5535h	←*2
150W	0h	
LAMP RUN TIME	535h	←*3
130W	535h	←*4 Value A (changeable)
150W	0h	
FILTER TIME	190h	←*5 Value B (changeable)
2502:1	9002:1	2303:1
2706:1	2305:1	

< Service Mode (LCD Main C.B.A. (1)) >

*1: The number of Lamp resets

*2: The total elapsed Lamp operation time (in hours)

*3: The current elapsed Lamp operation time (in hours)

*4: The current elapsed Lamp operation time (in hours)

*5: The total elapsed Filter use time (in hours)

LAMP TIME is stored in EEPROM on the LCD Main C.B.A. Therefore, before removing the Projection Unit at the user's location, make a note of the LAMP RUN TIME (value A) in Service Mode.

Then, after installing the new Projection Unit **(without the Lamp)** at the user's location, be sure to install the original Lamp and set the LAMP RUN TIME to the original value (value A) in Service Mode.

Otherwise, OSD and LED indication to request for Lamp replacement will be displayed at the wrong time.

Note:

In case it is impossible to make a note of the LAMP RUN TIME because of a defective LCD Main C.B.A., ask the customer their daily average use and the approximate age of the current Lamp. Then, calculate the LAMP RUN TIME as follows and make a note.

$$\boxed{\text{Daily average use (hours)}} \times \boxed{\text{Approx. age (days)}} = \boxed{\text{LAMP RUN TIME (hours)}}$$

2. Be sure to make a note of the FILTER TIME (value B) in Service Mode (LCD Main C.B.A. (1)):

FILTER TIME is stored in EEPROM on the LCD Main C.B.A. Therefore, before removing the Projection Unit at the user's location, make a note of the FILTER TIME (value B) in Service Mode.

Then, after installing the new Projection Unit at the user's location, be sure to set the FILTER TIME to the original value (value B) in Service Mode.

Otherwise, OSD and LED indication to request for Air Filter cleaning will be displayed at the wrong time.

3. After removing the Projection Unit, take out the Light Prevention Plate and the Lamp from the Projection Unit once and keep them. Then, be sure to install the Light Prevention Plate and the Lamp into the new Projection Unit for replacement.

Service Mode Map

How to ENTER Service Mode:

VOLUME DOWN button + TV/VIDEO key
(on the Center Panel) (on the remote)

(for more than 5 seconds in power off condition)

Power ON

SERVICE MODE	
KEY DET	IR:1 UNIT:1
IC3701:1	5003:1 5006:1
IC5301:1	5502:1 7201:1
IC6001 PORT	V:1.00 B:15
P0	100-0111 P7 01001110
P1	00000000 P8 11000111
P2	11100000 P9 ---011
P4	-0-1-1-1 PA 00111000
P5	--01001 PB 11000000
P6	00110001 PC ---1111

< Service Mode (TV Main C.B.A.) >

SWAP key (on the remote) ↓
(for more than 5 seconds)

RECALL key (on the remote) ↑

SERVICE MODE	
LAMP / FILTER / IIC	
IC2301PORT / SERIAL	
VER:0202318	
V9F 3F 81 01 9C 9C 20 33	
P7F C3 00 9E 9E 01 00 00	

< Service Mode (LCD Main C.B.A.) >

ACTION key (on the remote)



RECALL key (on the remote)



ACTION key (on the remote)

SERVICE MODE RESET	1
TOTAL TIME	
130W	5535h
150W	0h
LAMP RUN TIME	535h
130W	535h ← Value A
150W	0h
FILTER TIME	190h ← Value B
2502:1	9002:1 2303:1
2706:1	2305:1

< Service Mode (LCD Main C.B.A.(1)) >

SERVICE MODE	
IC2301 PORT	
P0	00000000 P7 10000001
P1	--001000 P8 ---0001
P2	00001111 P9 -1110011
P3	00000010 P1010100000
P4	11001111 P11---00000
P5	11001110 P12-----0
P6	--000000
9202:12	9204:0E 9801:E2
9508:12	9501:00 9803:BB

< Service Mode (LCD Main C.B.A.(2)) >

How to Exit:

Power button only

WHEN REPLACING THE PROJECTION UNIT ON THE UNIT AT THE USER'S LOCATION

CAUTION:

When removing the Projection Unit, take out the Light Prevention Plate and the Lamp from the Projection Unit once and keep them. Then, be sure to install the Light Prevention Plate and the Lamp into the new Projection Unit for replacement.

ADJUSTMENT/SETTING of the Projection Unit

Be sure to do the following:

- 1. Picture Position Adjustment
- 2. Focus Adjustment

Note:

Item 2 is not always necessary. Perform this adjustment if necessary.

- 3. Set LAMP RUN TIME to the original value

Note:

Item 3 is always necessary to use the original Lamp.

- 4. Set FILTER TIME to the original value

Note:

Item 4 is always necessary to use the original Air Filter.

Preparation of Adjustment

- 1. Install the original Light Prevention Plate and the original Lamp into the new Projection Unit. Then, install the new Projection Unit into the Unit.
- 2. Connect Connector P2911 on the Front Thermistor and install the Center Panel Unit and the Lamp Cover. Refer to "THE LAMP COVER SWITCH AND THE FRONT THERMISTOR CAUTIONS."
- 3. Set the Front Cover L and Front Cover R Unit under the Base Front Panel Unit so as not to damage the connectors on the TV Main C.B.A. as shown.
- 4. Install the Filter tool on the Front Fan. Refer to "COVERING THE FRONT FAN CAUTION."

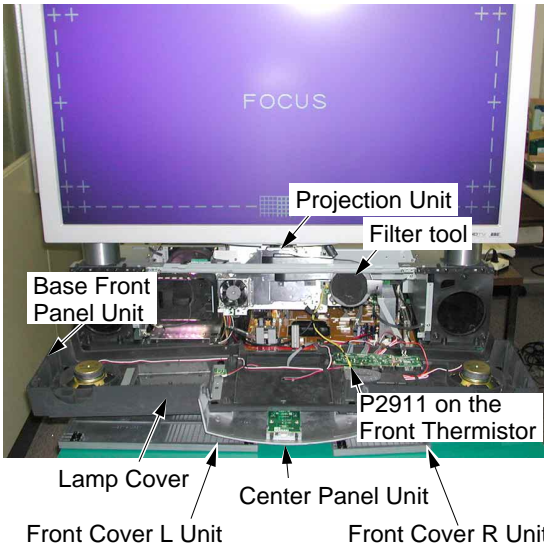
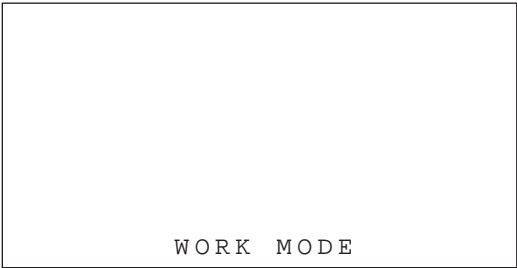


Fig. 4-1

- 5. Turn the power on.

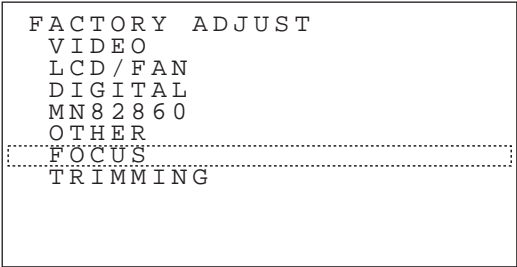
- 1. Picture Position Adjustment
 - 1) Press and hold the VOLUME DOWN button on the unit and the RECALL key on the remote for over 5 seconds in power on condition. The unit will go into the FACTORY mode. (The POWER LED, TEMP LED and LAMP LED will light up for 5 seconds and "WORK MODE" will appear on the screen.)



< FACTORY mode >

Fig. 4-2

- 2) Then, press and hold the VOLUME DOWN button on the unit and the SWAP key on the remote for over 5 seconds. The unit will go into the FACTORY ADJUST mode. (FACTORY ADJUST menu will appear.)



<FACTORY ADJUST mode>

Fig. 4-3

- 3) Press CH UP/DOWN key on the remote to select "FOCUS" on menu and press the ACTION key. (The FOCUS screen will appear.)

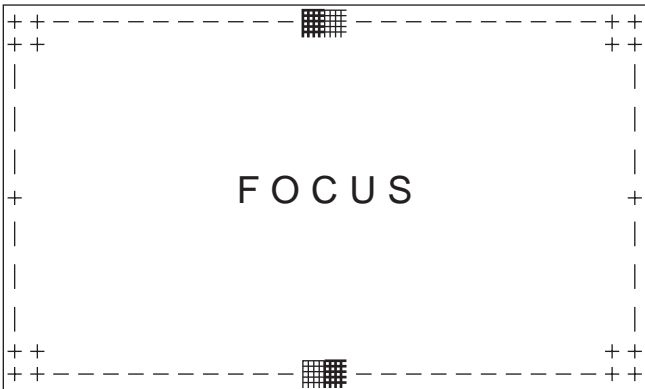


Fig. 4-4

4) Loosen Screws "a" and "b."

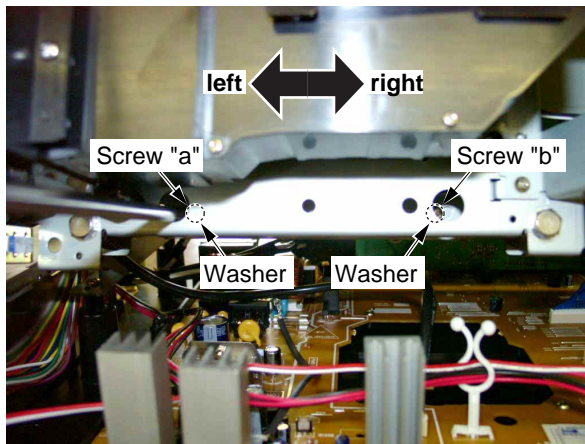


Fig. 4-5

5) Adjust the Projection Unit to the left or the right so that both width on the left ("A") and on the right ("B") become same. Then, the top and bottom marks are centered as shown.

Note:

If the Projection Unit is moved left, the Focus Screen moves right.

If the Projection Unit is moved right, the Focus Screen moves left.

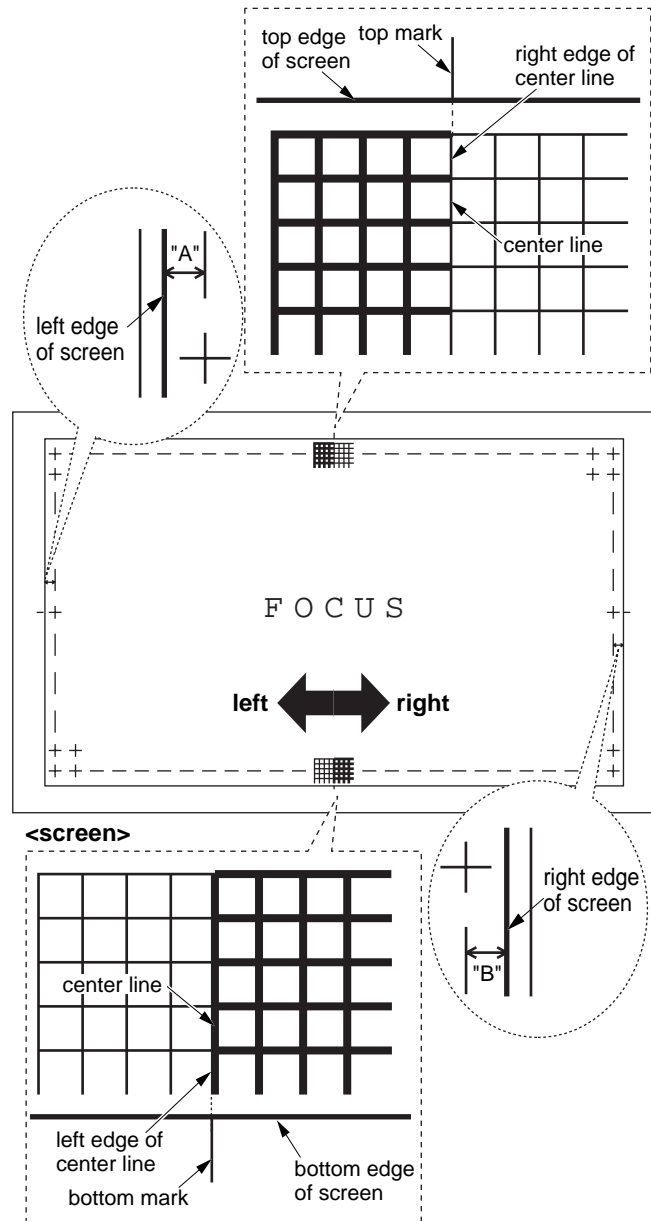


Fig. 4-6

6) Tighten screws "a" and "b" to fix the Projection Unit after adjustment.

(Tilt Adjustment)

Note:

There are 4 hex nuts "c1" "d1" "c2" "d2" on the Projection Unit.

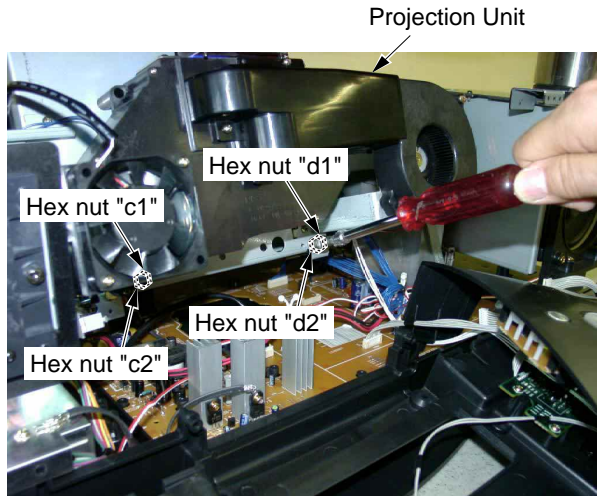


Fig. 4-7-1

- 7) Remove the hex nuts "c1" and "d1" using a 10 mm hex wrench.

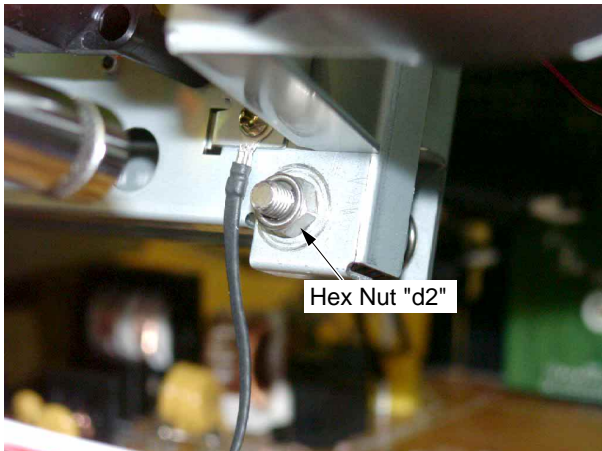
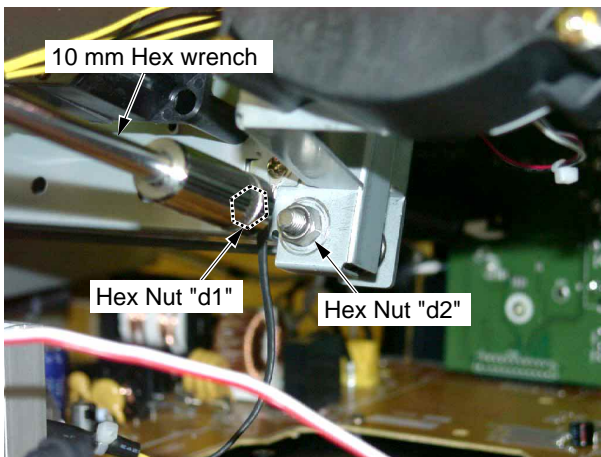


Fig. 4-7-2

- 8) Adjust the Projection Unit by turning the hex nuts "c2" and "d2" using a 10 mm hex. wrench so that both width in the top ("C") and in the bottom ("D") become same. Then, the right and left marks are almost centered as shown.

Note:

If the hex nut "c2" are turned clockwise, the Right Focus Screen moves up.

If the hex nut "d2" are turned clockwise, the Left Focus Screen moves up.

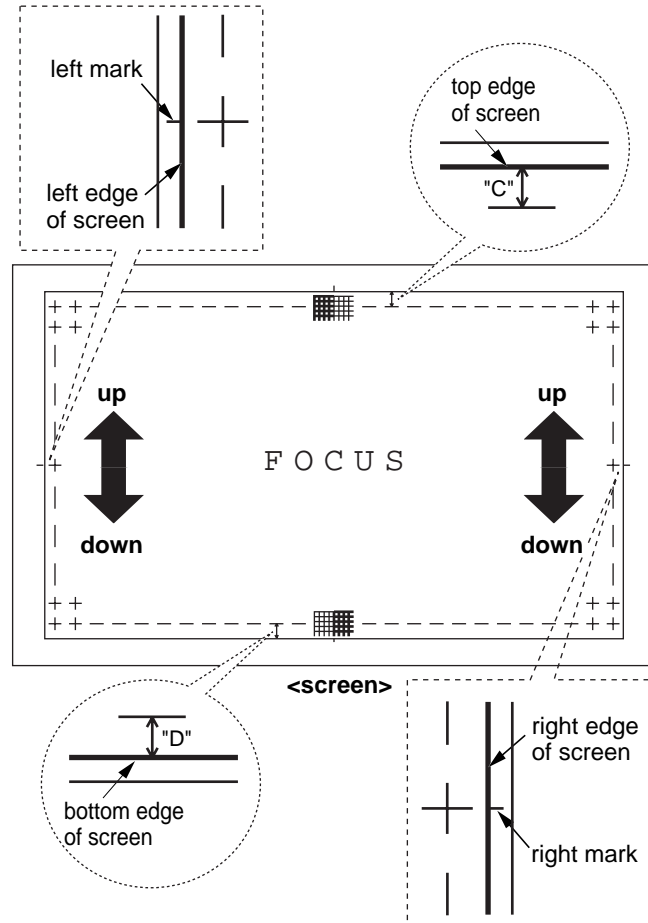


Fig. 4-7-3

- 8) After adjusting, install the hex nuts "c1" and "d1." Then, tighten the hex nuts "c1" and "d1" while fixing the hex nuts "c2" and "d2" by using a wrench.

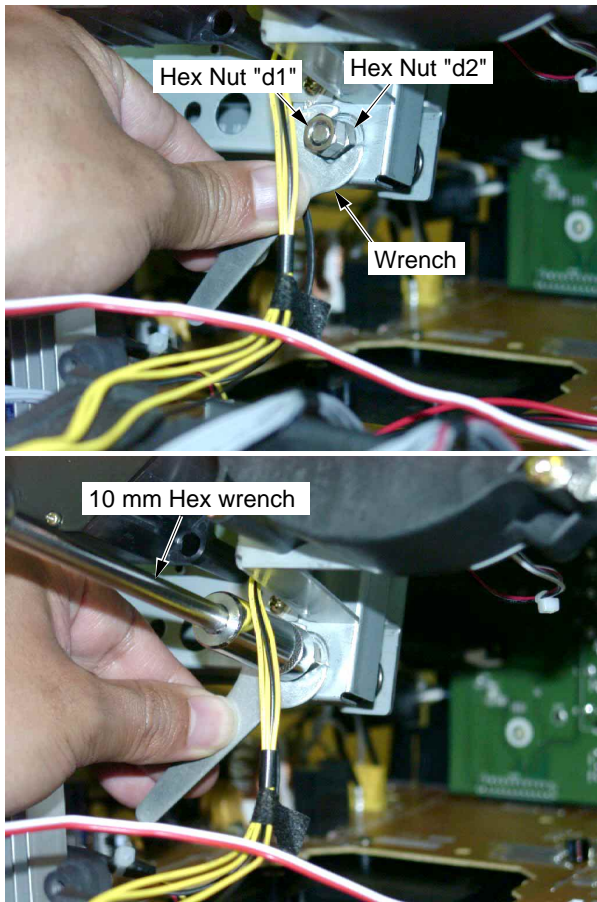


Fig. 4-7-4

9) Confirm that the Right and Left marks are centered.

2. Focus Adjustment

- 1) Loosen the 2 Screws on the Projection Lens until the Projection Lens can be moved.
- 2) Adjust the Projection Lens by rotating the Projection Lens so that each pixels in the seven portions are clearly visible to obtain the best focus.

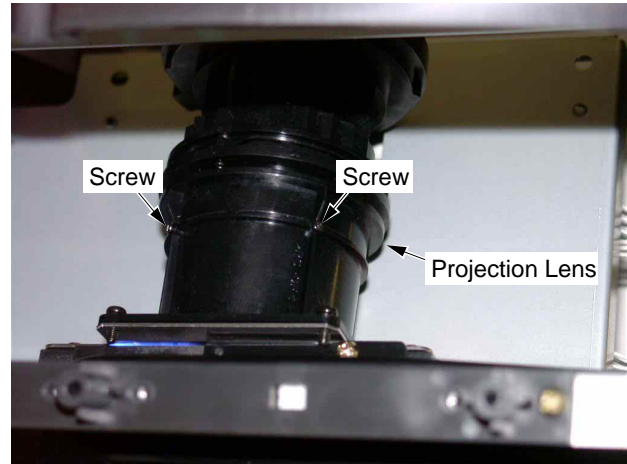
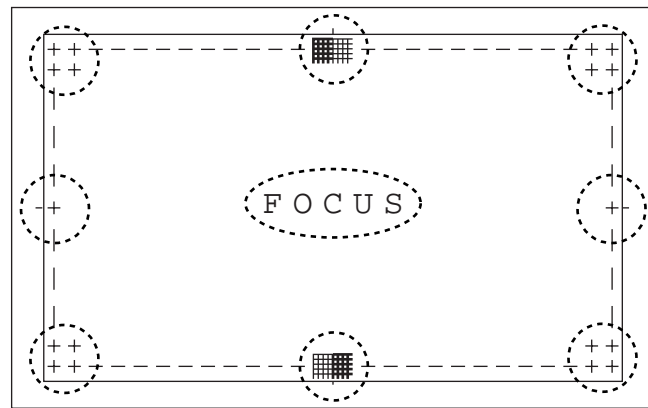


Fig. 4-8-1



<screen>

Fig. 4-8-2

- 3) After adjusting, tighten the 2 Screws on the Projection Lens.

3. **Set LAMP RUN TIME to the original value**
- 1) Select LAMP RUN TIME in Service Mode (LCD Main C.B.A. (1)).
 - 2) Press the VOLUME UP/DOWN key on the remote to change to the original value (value A) that was noted before removing the Projection Unit at the user's location.

S E R V I C E	M O D E	R E S E T	1
T O T A L	T I M E		
1 3 0 W		5 5 3 5 h	
1 5 0 W		0 h	
L A M P	R U N	T I M E	5 3 5 h
1 3 0 W		5 3 5 h	← Value A (changeable)
1 5 0 W		0 h	
F I L T E R	T I M E	1 9 0 h	← Value B (changeable)
2 5 0 2 : 1	9 0 0 2 : 1	2 3 0 3 : 1	
2 7 0 6 : 1		2 3 0 5 : 1	

< Service Mode (LCD Main C.B.A. (1)) >

Fig. 4-9

4. **Set FILTER TIME to the original value**
- 1) Select FILTER TIME in Service Mode (LCD Main C.B.A. (1)).
 - 2) Press the VOLUME UP/DOWN key on the remote to change to the original value (value B) that was noted before removing the Projection Unit at the user's location.
- Note:**
If the Air Filter is cleaned, reset the FILTER TIME (change to "0" (value B)).

REPLACEMENT OF LAMP

Lamp Time Reset Procedure:

Be sure to reset the Lamp time to "0" after replacing the Lamp.

1. Plug in the AC Cord, and turn on the power by pressing the POWER button.
2. Press and hold the VOLUME DOWN button on the unit and the PIP key on the remote together for over 5 seconds in power on condition.

When the reset is finished, the display as shown in Fig. 5-1 appears and the LAMP LED goes out.



Fig. 5-1

Note:

1. If the Lamp time exceeds 5000 hours, when turning on the power (Lamp ON), the display as shown in Fig.5-2 appears for about 5 minutes and LAMP LED flashes.

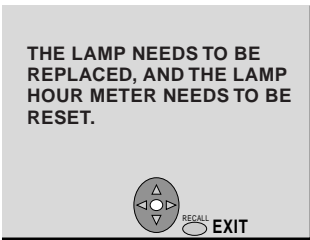


Fig. 5-2

2. Due to variation in the way each lamp is used, the lamp may need to be replaced before the maximum 5000 hour limit is reached. These variations include the number of times and the duration the lamp is lit, prolonged use in excess of 24 hours, and any mechanical shock the bulb may accidentally experience. In situations where the use of this product is critical we recommend keeping a spare bulb on hand.

WARNING:

The high-pressure lamp may explode if not properly handled. The lamp is hot immediately after use. Touching it directly may cause burns. Please allow the lamp to cool before handling or replacing the lamp unit.

Avoid touching the glass portion of the bulb with your fingers. Natural oils from your skin can cause a "hot spot" to develop, which can cause the bulb to crack when it gets hot. In case the bulb is accidentally touched, the area should be carefully cleaned using isopropyl alcohol and a soft lint free cloth or cotton ball.

Cautions for Lamp Unit Replacement:

- Handle the removed old lamp unit carefully. If handled improperly, it may explode.
- Wear gloves when replacing the lamp unit.
- If replacing the lamp unit becomes necessary during the operation of the TV, follow the procedure below to turn off the power and wait until the lamp unit cools completely.

Lamp Replacement Procedure:

1. Press the POWER button on the remote to turn off the power.
2. Wait for about 1 minute until the cooling fan stops.

Note:

The lamp cooling fan will continue to operate for about 1 minute after the power is turned off. Do not unplug the AC Cord from the outlet until the fan has stopped. Avoid interrupting the power by using circuit breakers or switchable power strips.

3. After the cooling fan has stopped, unplug the AC Cord from the outlet.

Note:

Please wait more than one hour before replacing the lamp.

[Forced cooling function]

If you need to replace the lamp more urgently:

- The Projection display has a forced cooling feature. After the POWER button is turned OFF, and sometime during about the first minute of the normal cooling fan operation, press the VOLUME UP button on the unit and CH UP key on the remote at the same time for more than 5 seconds. The cooling fan will operate for about 10 minutes.

4. Remove the Front Cover L Unit from the latches.
5. Remove the Lamp Cover by loosening the 2 Screws.



Fig. 5-3

6. Loosen the 2 Screws on the Lamp. Then, pull the Lamp.

Note:

Because the Lamp may still be hot, use caution when handling.

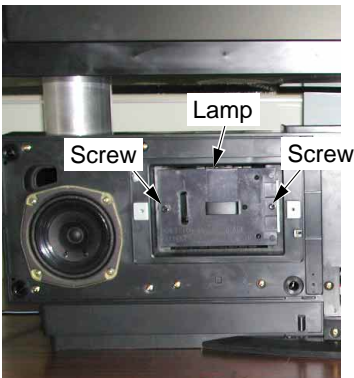


Fig. 5-4

7. Install the new Lamp, and tighten the 2 Screws.
8. Install the Lamp Cover securely, and tighten the 2 Screws.
9. Install the Front Cover L Unit.

Note:

After replacing the Lamp, use caution to reset the Lamp time.

REPLACEMENT OF FILTER UNIT

Filter Time Reset Procedure:

- Be sure to reset Filter time to "0" after replacing the Filter.
1. Clean the Filter Unit.
 2. Select FILTER TIME in Service Mode.
 3. Press the VOLUME UP/DOWN key on the remote to reset (change to "0").

Note:

1. The Filter should be cleaned about every 400 hours.
2. If Air Filter operation time exceeds 400 hours, the display as shown in Fig. 6-1 appears for 5 minutes.



Fig. 6-1

The display as shown in Fig. 6-2 appears when turning on the power again after cleaning the Filter Unit in power off condition.
Filter time is reset by selecting "YES" as shown below.



Fig. 6-2

Clogged Air Filter Detection

When a dirty or clogged air filter is detected, the OSD is displayed for 1 minute. And then the Lamp is turned OFF.



Fig. 6-3

Note:

At this time, only the POWER button is operational. When the Power is turned off with the POWER button, the usual confirming message does not appear.

Filter Replacement Procedure:

Replace the Filter Unit when it remains clogged, dirty or damage even after cleaning.

1. Remove the Front Cover R Unit from the latches.
Remove the Filter Unit by releasing indented portion of the Filter Unit.

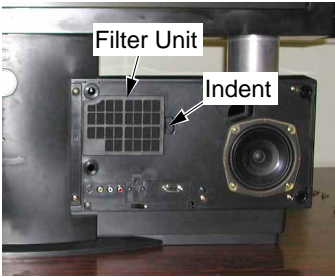


Fig. 6-4

Warning:

Do not operate this unit without having the air filter installed. Dirt or dust particles will be sucked into the LCD display and costly damage and / or picture deterioration may occur.

2. Install the new Filter Unit.

CLEANING METHOD

THE SCREEN UNIT AND THE MIRROR

•THE SCREEN UNIT (Lenticular Screen, Fresnel Lens)

The Lenticular Screen surface should be wiped gently with a clean, soft, dry cloth. If the dirt cannot be removed by wiping with a dry cloth, lens cleaner can be used. Wipe evenly so as not to leave any streaks.

Note:

Do not use cleaning materials containing methyl alcohol, acetone, or dichloromethane.

Wipe the surface of the Fresnel Lens with a clean, soft, dry cloth.

•THE MIRROR

Remove any dirt with a compressed air blower or wipe with a clean, soft, dry cloth. If wiped too forcefully, the surface of the Mirror can be damaged. If wiping with a clean, dry cloth does not remove the dirt, the Mirror must be replaced.

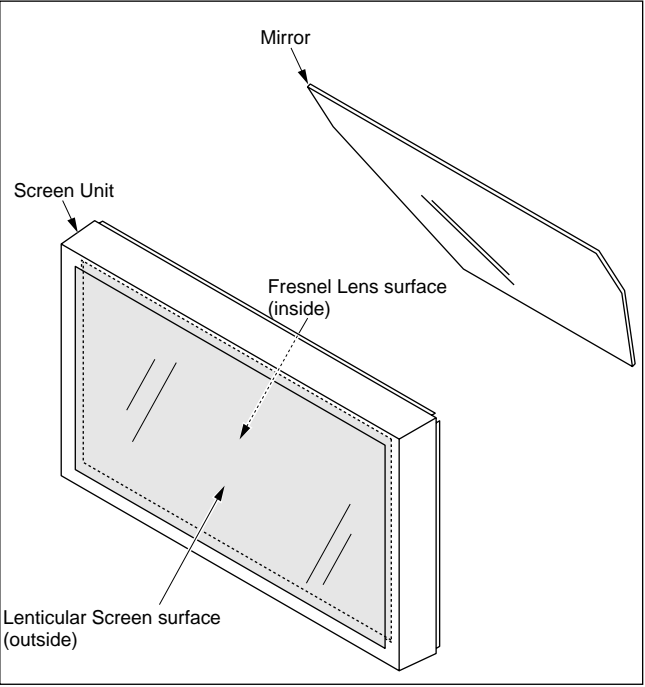


Fig. 7-1

THE LAMP

Gently wipe the surface of the glass of the Lamp with cleaning paper or soft cloth.

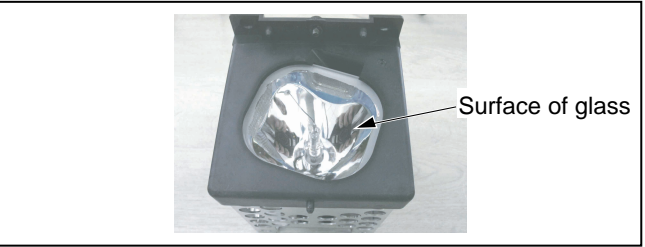


Fig. 7-2

THE FILTER

Note:

The Filter should be cleaned about every 400 hours.

CAUTION:

Operating with torn or damaged Filter may cause damage to the Projection unit.

Clean the Filter. Gently remove any accumulated dust from Filter with a vacuum cleaner.

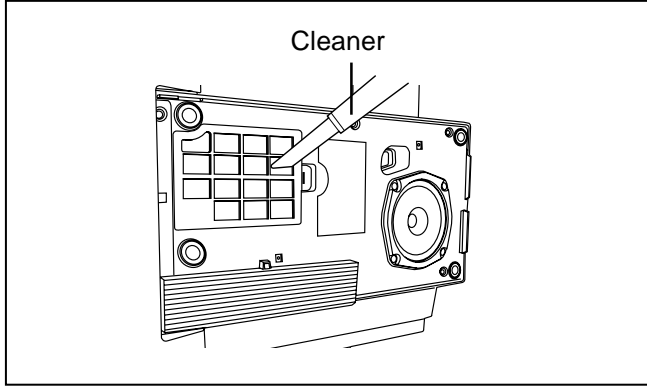


Fig. 7-3

THE PROJECTION LENS

Use lens cleaning paper and cleaner available at your local camera shop, etc. Dampen the cleaning paper with cleaner and gently wipe the surface of the lens from the center outward to remove dust.

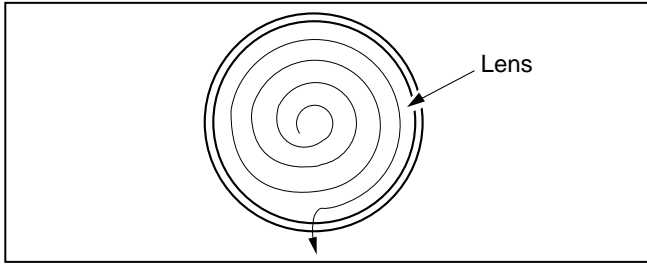


Fig. 7-4

THE POLARIZER UNIT, THE FIELD LENS, THE RELAY LENS, THE CONDENSER LENS, THE DICHOIC MIRROR, THE FULL MIRRORS, THE INTEGRATOR AND THE P/S CONVERTER

Make sure that no dust gets on the optical components such as the Polarizer Unit, the Field Lens, the Relay Lens, the Condenser Lens, the Dichroic Mirror, the Full Mirrors, the Integrator and the P/S Converter. Clean these optical components with cleaning paper moistened with lens cleaner if necessary.

MAIN PARTS LOCATION

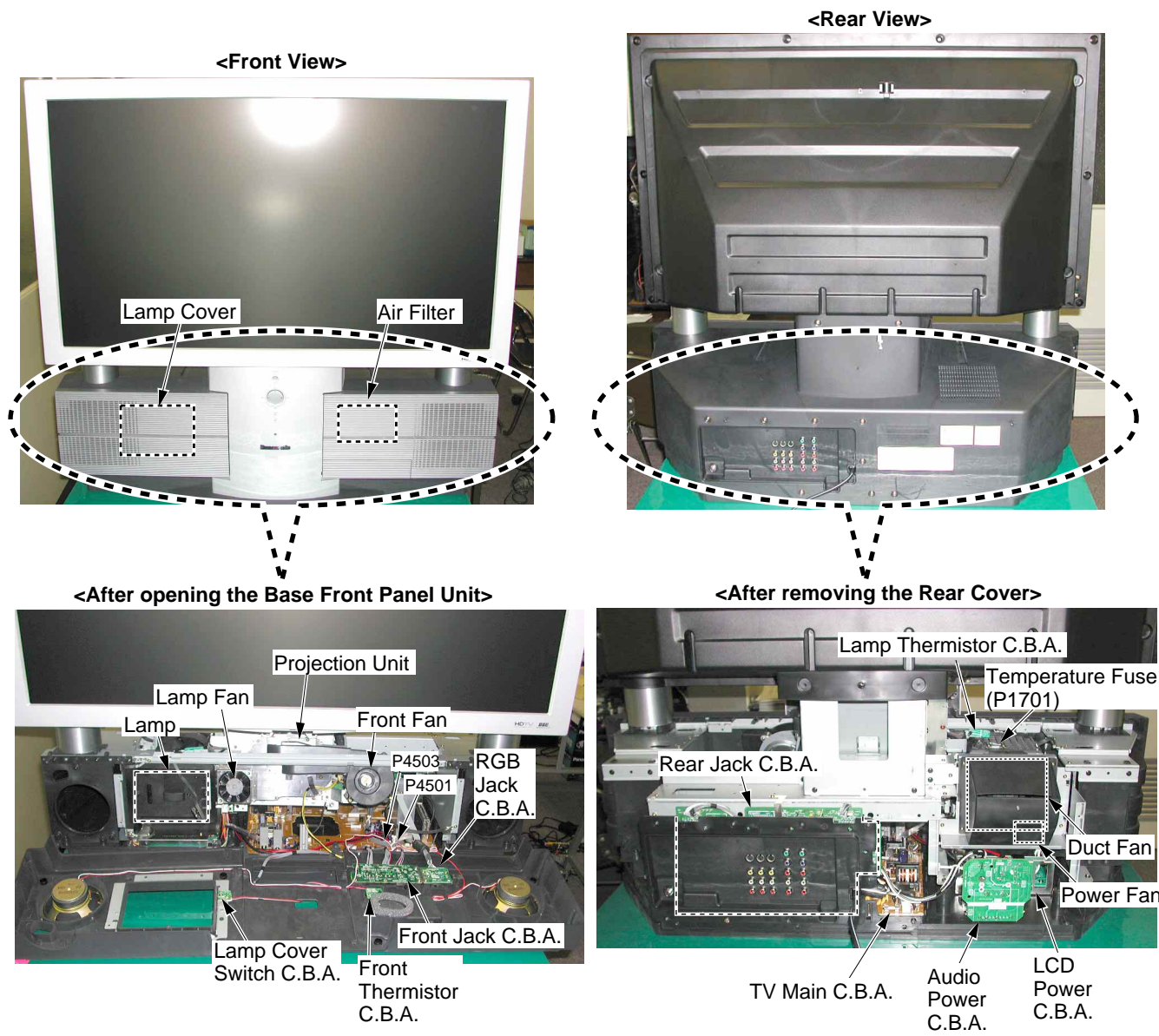


Fig. 8

WIRE AND LEAD POSITION DIAGRAM

After servicing, make sure that all wires, leads, and clampers are placed in their original position. It is important for the best operation of the unit.

Note:
Use extreme care especially for the following.

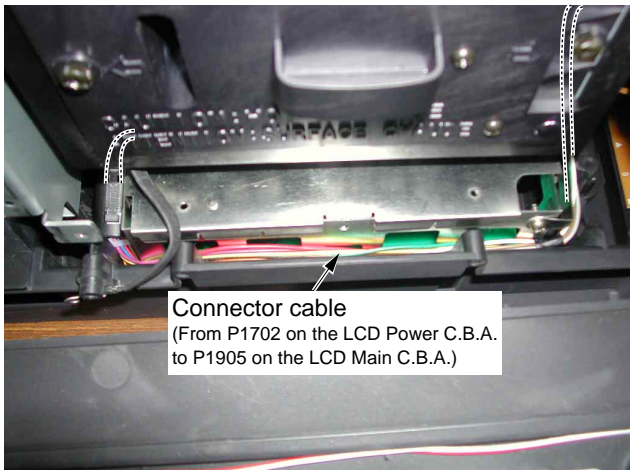
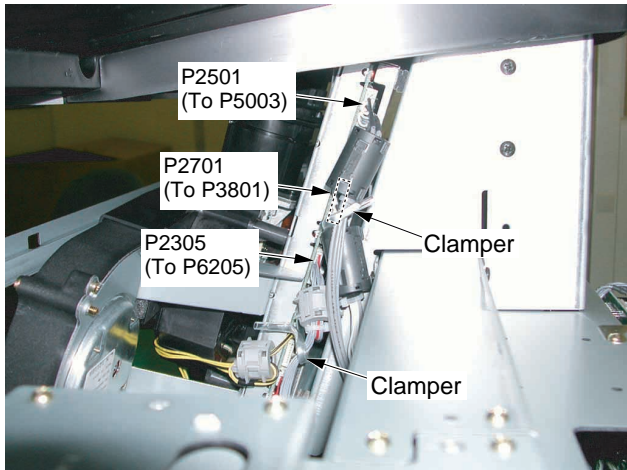
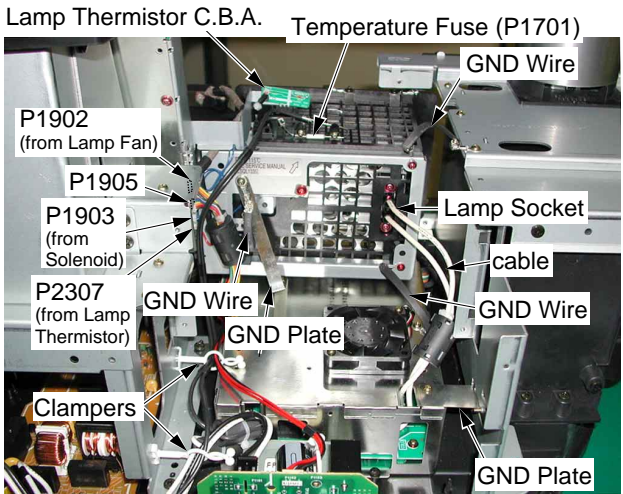
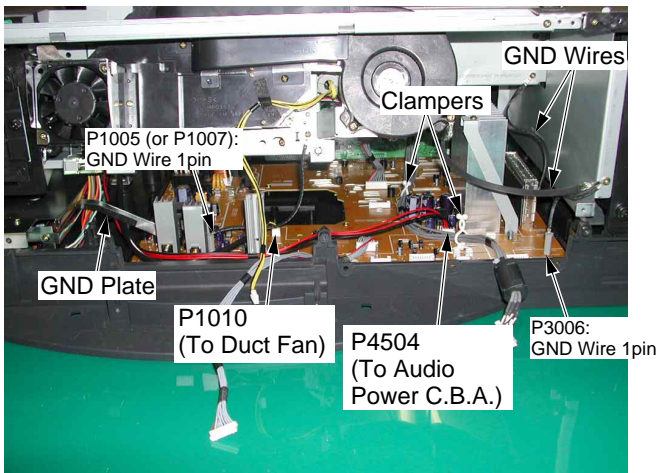
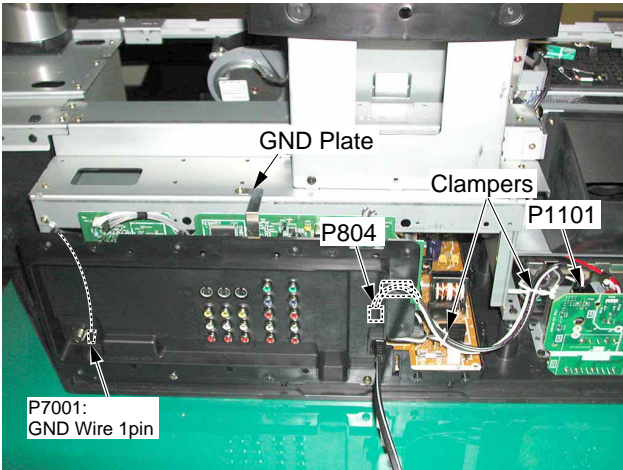
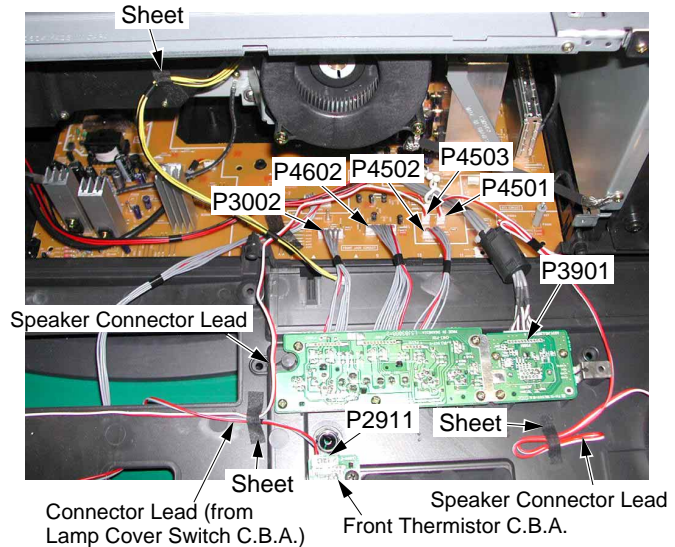


Fig. 9

HOW TO CHECK THE REAR JACK C.B.A.

- 1. Remove the Rear Cover. Refer to Step 1 in HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.

Note:

In this position, it is possible to check the TPs (TP3801, TP3802, TP3803, TP5003, TP5004, TP5005) and Connectors (P3801, P5003) on the upper portion of the Rear Jack Panel.

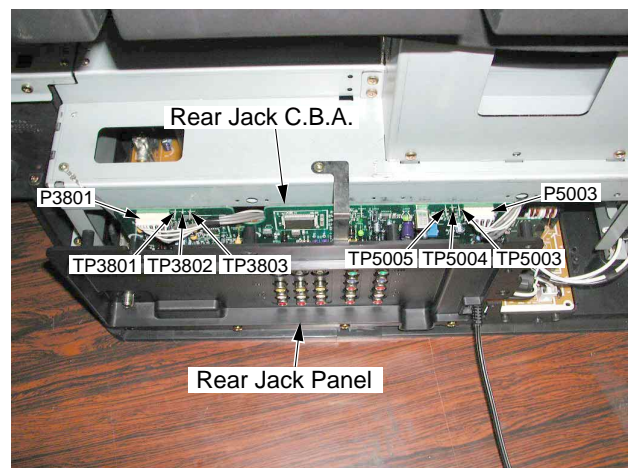


Fig. 10-1

- 2. Remove the Rear Jack Panel from the Rear Jack C.B.A. To do this, remove the AV Front Door, the Front Cover L Unit, the Front Cover R Unit, the Center Panel Unit, the Lamp Cover and the Base Front Panel Unit in order. Refer to steps 2~12 in HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.
- 3. Install the TV Frame into the unit.

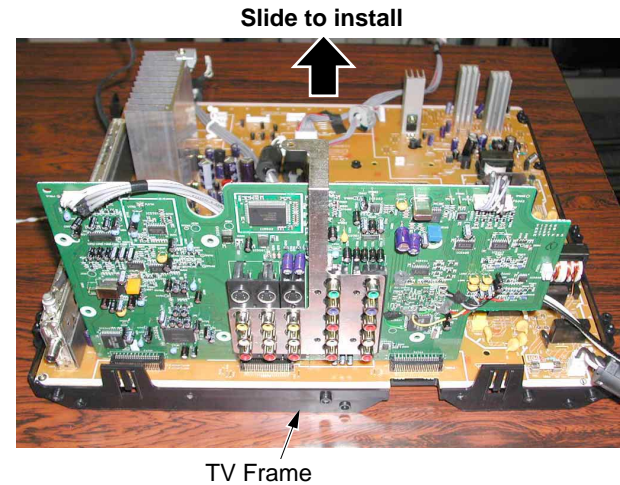


Fig. 10-2

- 4. Reconnect Connector cables to Connectors P1007, P1010 and P4504 on the TV Main C.B.A.

- 5. Reconnect Connector cables to Connectors P2501, P2701, P2305 on the LCD Main C.B.A.
- 6. Reconnect Connector cables to Connector P804 on the TV Main C.B.A. Reconnect Connector cables to Connector P1101 on the Audio Power C.B.A.

<Checking position for the Rear Jack C.B.A.>

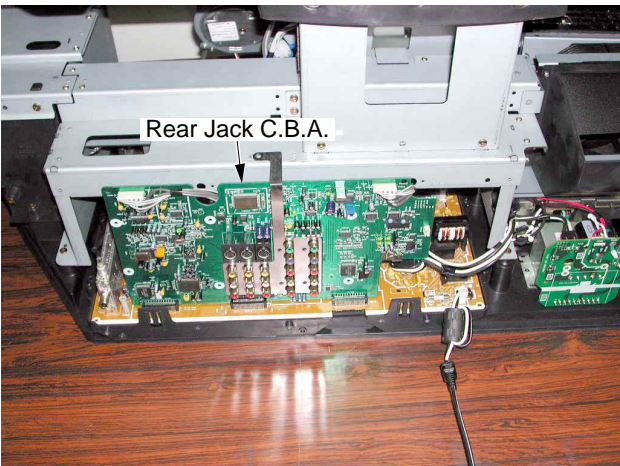


Fig. 10-3

HOW TO CHECK THE TV MAIN C.B.A. AND THE REAR JACK C.B.A.

1. Remove the Rear Cover, the AV Front Door, the Front Cover L Unit, the Front Cover R Unit, the Center Panel Unit, the Lamp Cover, the Base Front Panel Unit, the Rear Jack C.B.A. and the TV Main C.B.A. from the unit. Refer to Steps 1~14 in "HOW TO REMOVE THE TV MAIN C.B.A. AND THE REAR JACK C.B.A."
2. Set the TV Frame as shown in Fig. 11-3.
3. Install the Rear Jack C.B.A. into the TV Main C.B.A. by connecting Connectors P4601, P4603 and P4604.
4. Install the RGB Jack C.B.A. into the Rear Jack C.B.A. by connecting Connectors P3901.
5. Install the Front Jack C.B.A. into the TV Main C.B.A. by connecting Connector P3002, P4602, P4502.
6. Install the Operation C.B.A. into the TV Main C.B.A. by connecting P6204 Connector cable to Connector P6303.
7. Set the TV Main C.B.A. and the Rear Jack C.B.A. on the TV Frame.
8. Reconnect Connector cables to Connector P1010 (Duct Fan), P4504 (Audio Power C.B.A.) on the TV Main C.B.A.
9. Reconnect Connector cables to Connectors P2501, P2701 and P2305 on the LCD Main C.B.A.

Note:

When connecting Connector P2305 on the LCD Main C.B.A. and Connector P6205 on the TV Main C.B.A., use the **Extension Cable (LSUA0035)**. The original P2305 Connector Cable is not used in this position.

10. Reconnect Connector cable from the LCD Power C.B.A. to Connector P804 on the TV Main C.B.A.

Note:

Before connecting Connector P804, remove the Ferrite Core from Connector Cable by releasing the 2 Locking Tabs.

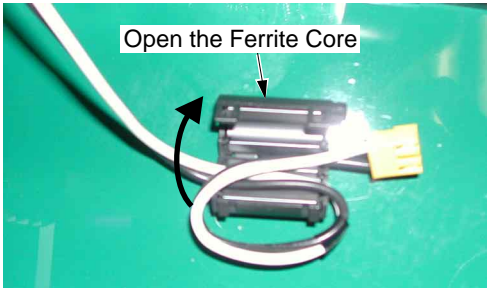
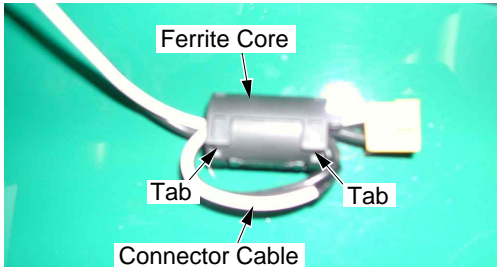


Fig 11-1

11. Reconnect Connector cable to Connector P1101 on the Audio Power C.B.A.
12. Install the Right Speaker Connector Leads into the TV Main C.B.A. by connecting Connector P4501.

Note:

Before connecting the Right Speaker Connector Leads, remove the Right Speaker Leads from the inside of the Base Front Panel Unit by removing the sheets.

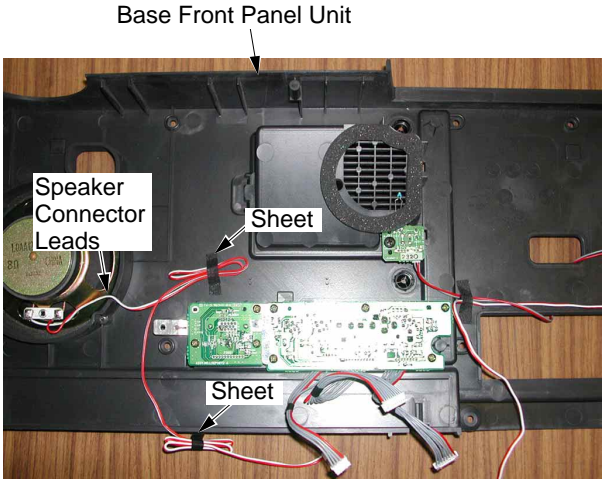


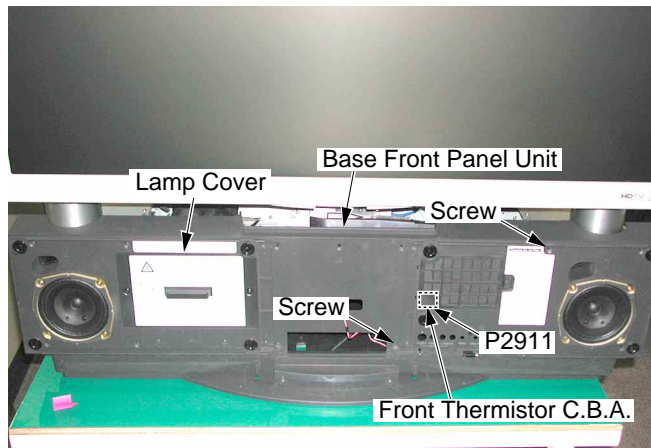
Fig. 11-2

13. Reconnect Connector cable to Connector P2911 on the Front Thermistor C.B.A.
14. Install the Base Front Panel Unit by tightening at least 2 Screws as shown in Fig. 11-3, or install the Filter tool.
15. Install the Lamp Cover into the Base Front Panel Unit by tightening at least 2 Screws as shown in Fig. 11-3.

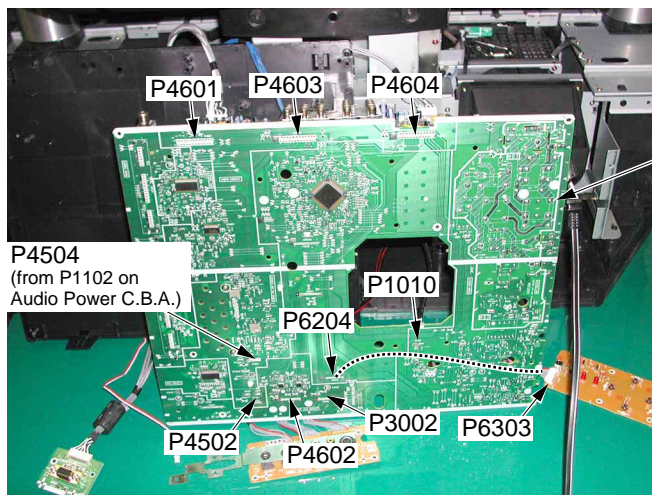
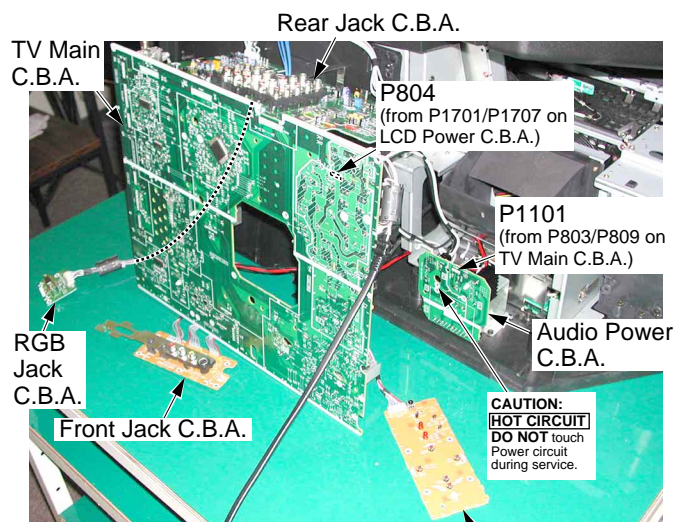
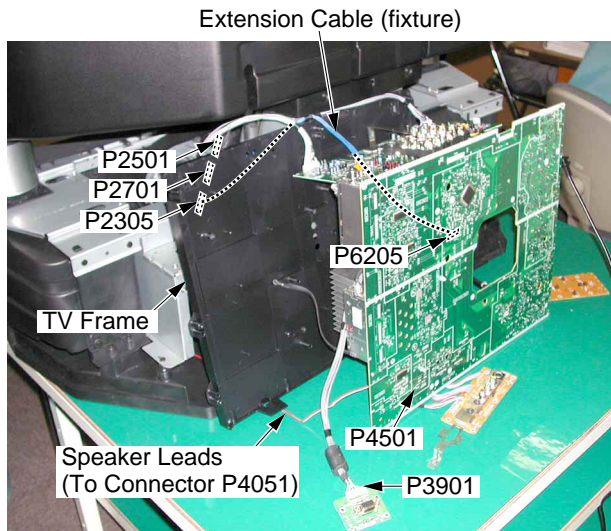
Note:

1. Take extreme caution when handling the Rear Jack Panel to avoid damage to Connectors P4601, P4603 and P4604 on the TV Main C.B.A.
2. Be sure to install the Base Front Panel Unit (with the Filter Unit), and tighten at least 2 Screws of the Base Front Panel Unit so that the Front Fan (Intake fan) is covered securely with the Filter. Alternatively, be sure to install the Filter tool on the Front Fan.

<Checking position for the TV Main C.B.A. and the Rear Jack C.B.A.>



<Front View>



<Rear View>

Fig. 11-3

HOT CIRCUIT

Primary circuit exists on the TV Main C.B.A., the LCD Power C.B.A. and the Audio Power C.B.A.
This circuit is identified as "**HOT**" on the C.B.A. and in the Service Manual. Use extreme care to prevent accidental shock when servicing.

MODEL NO. IDENTIFICATION MARK

Use Marks shown in the chart below to distinguish the different models included in this Service Manual.

MODEL	MARK
PT-40LC12	A
PT-45LC12	B
Not Used	PT

Note:
Refer to Item 3 of Schematic Diagram Notes of Schematic Diagram and Circuit Board Layout Notes, for mark "PT."

LARGE VIEW FOR WIRE AND LEAD POSITION DIAGRAM

Here are the figures for the detailed reference.

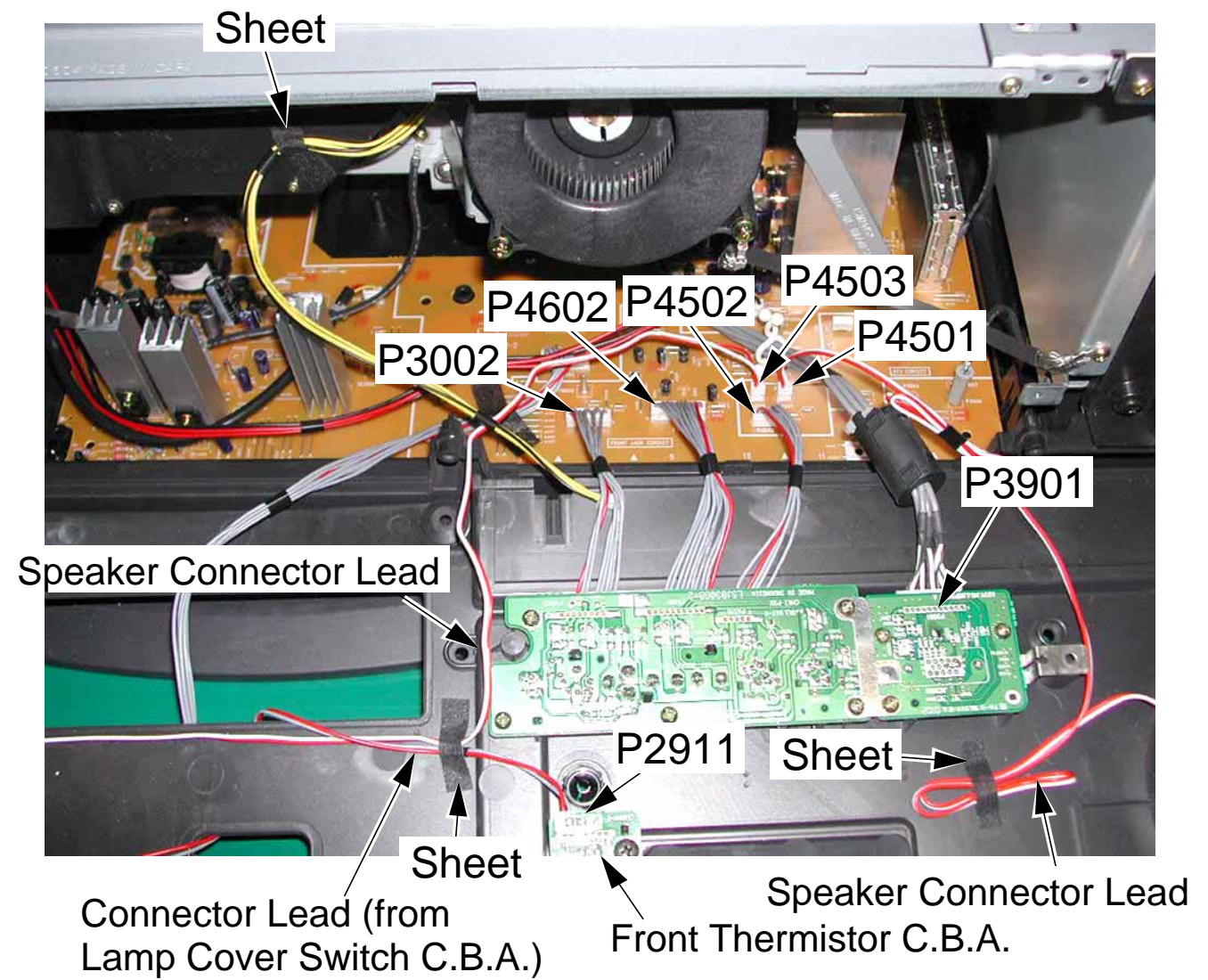


Fig. 9

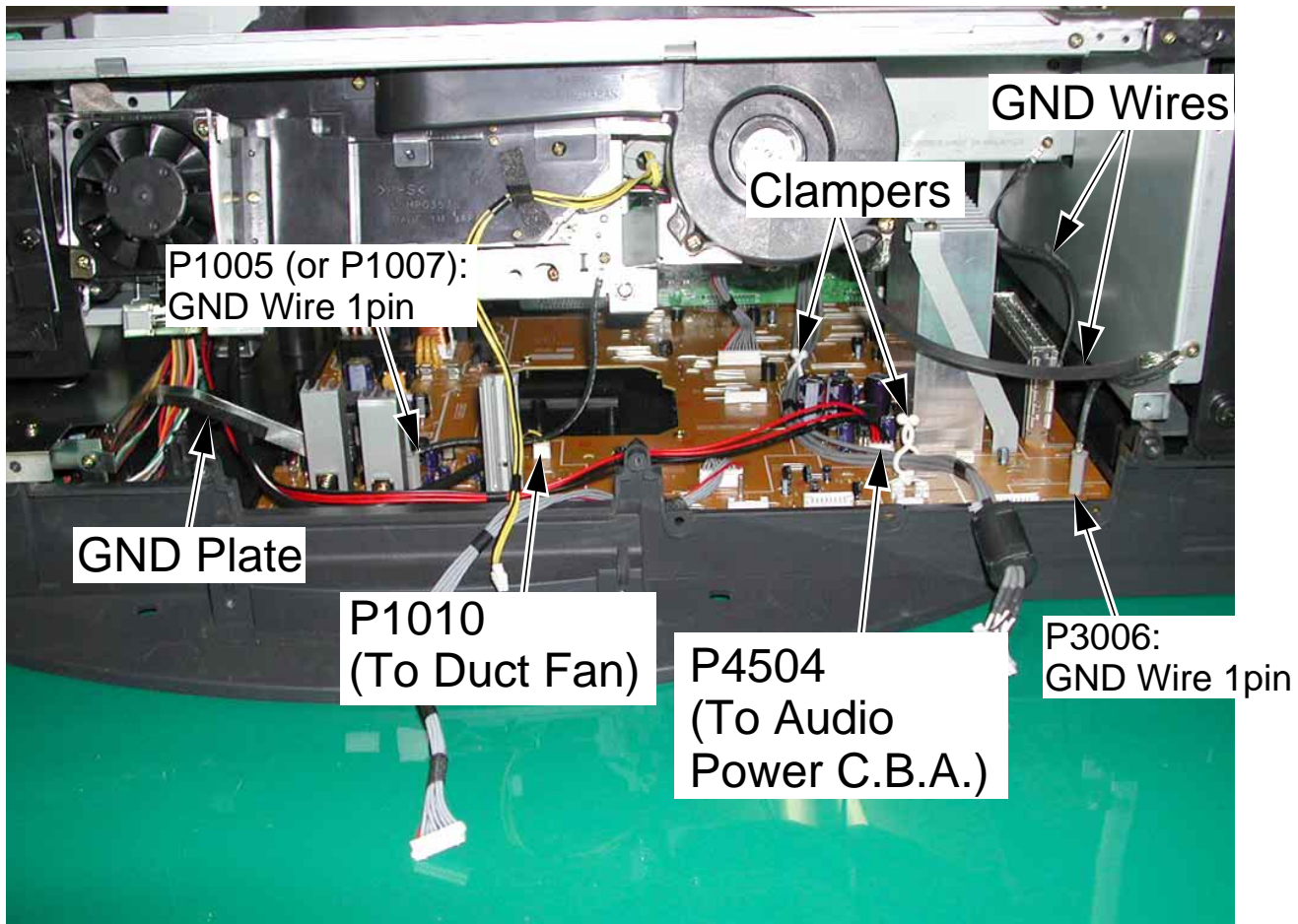


Fig. 9

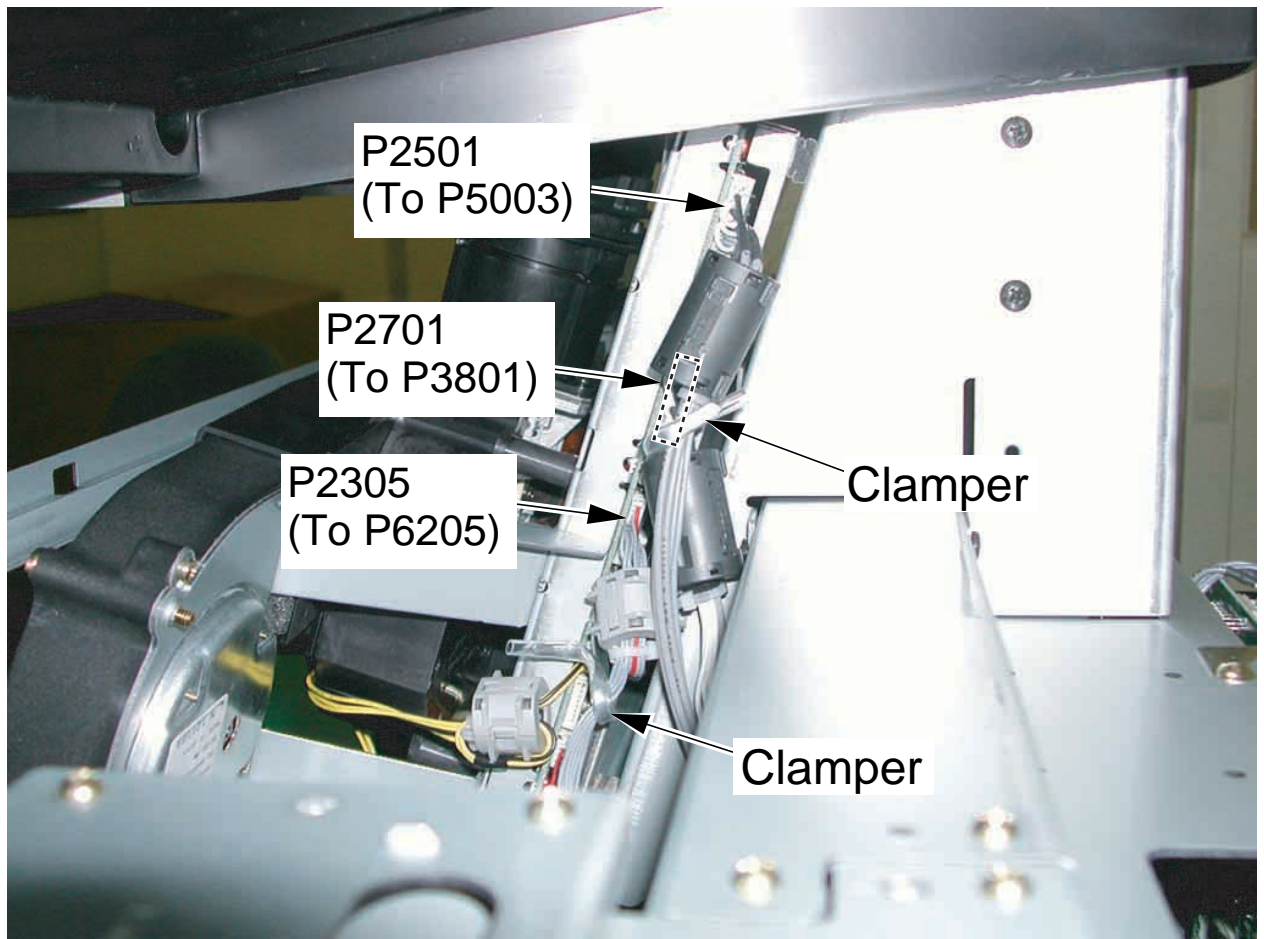


Fig. 9

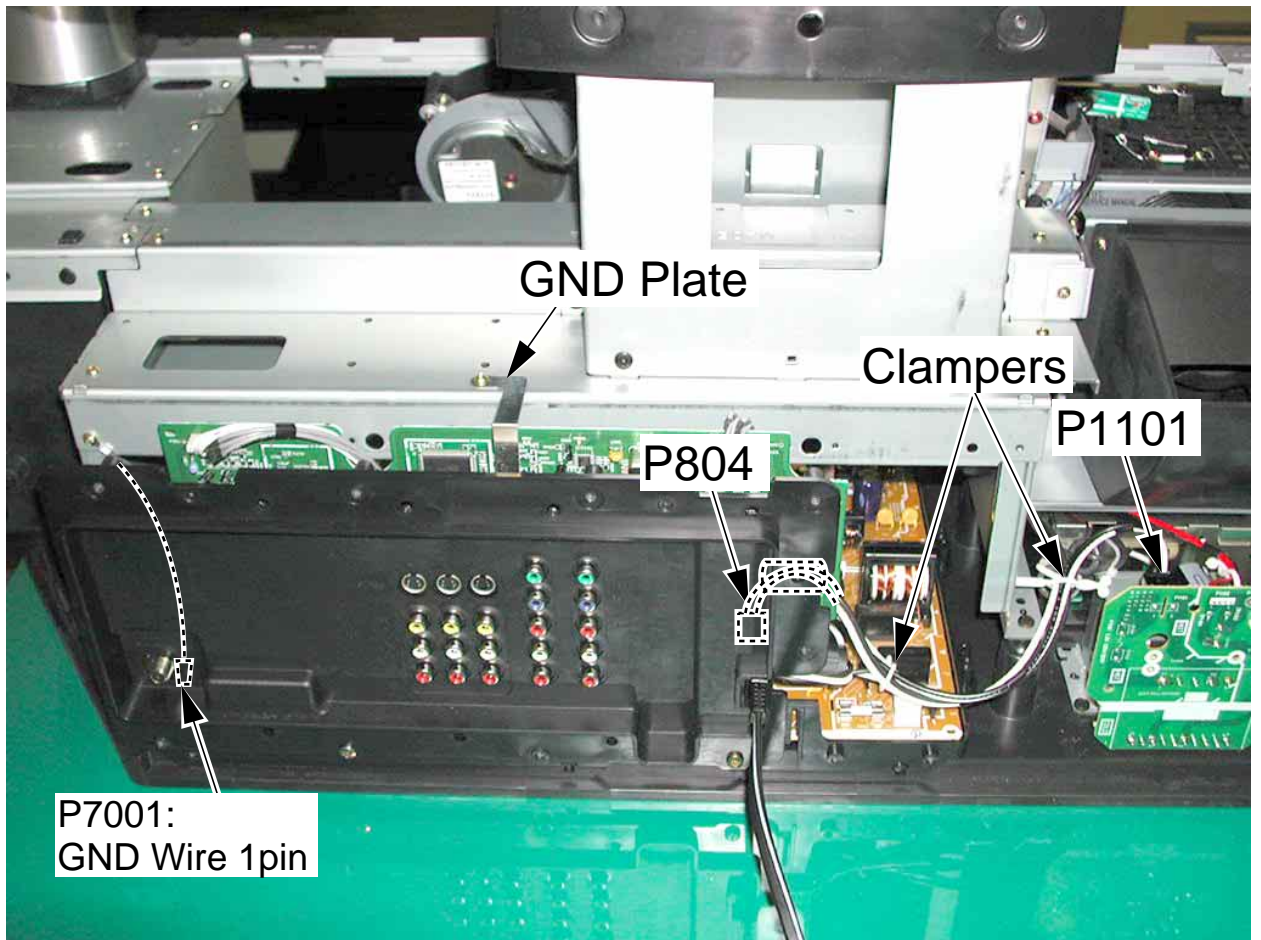


Fig. 9

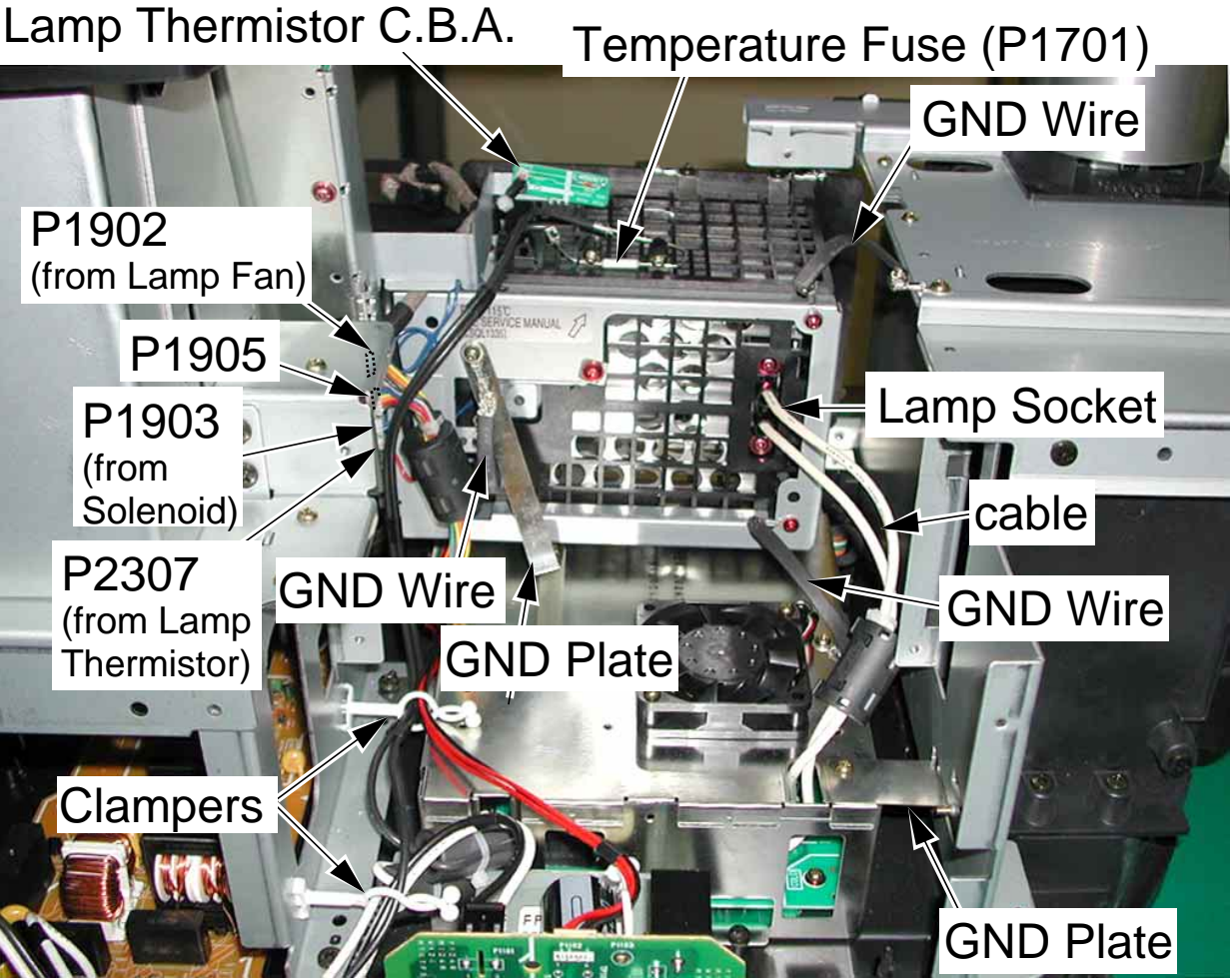
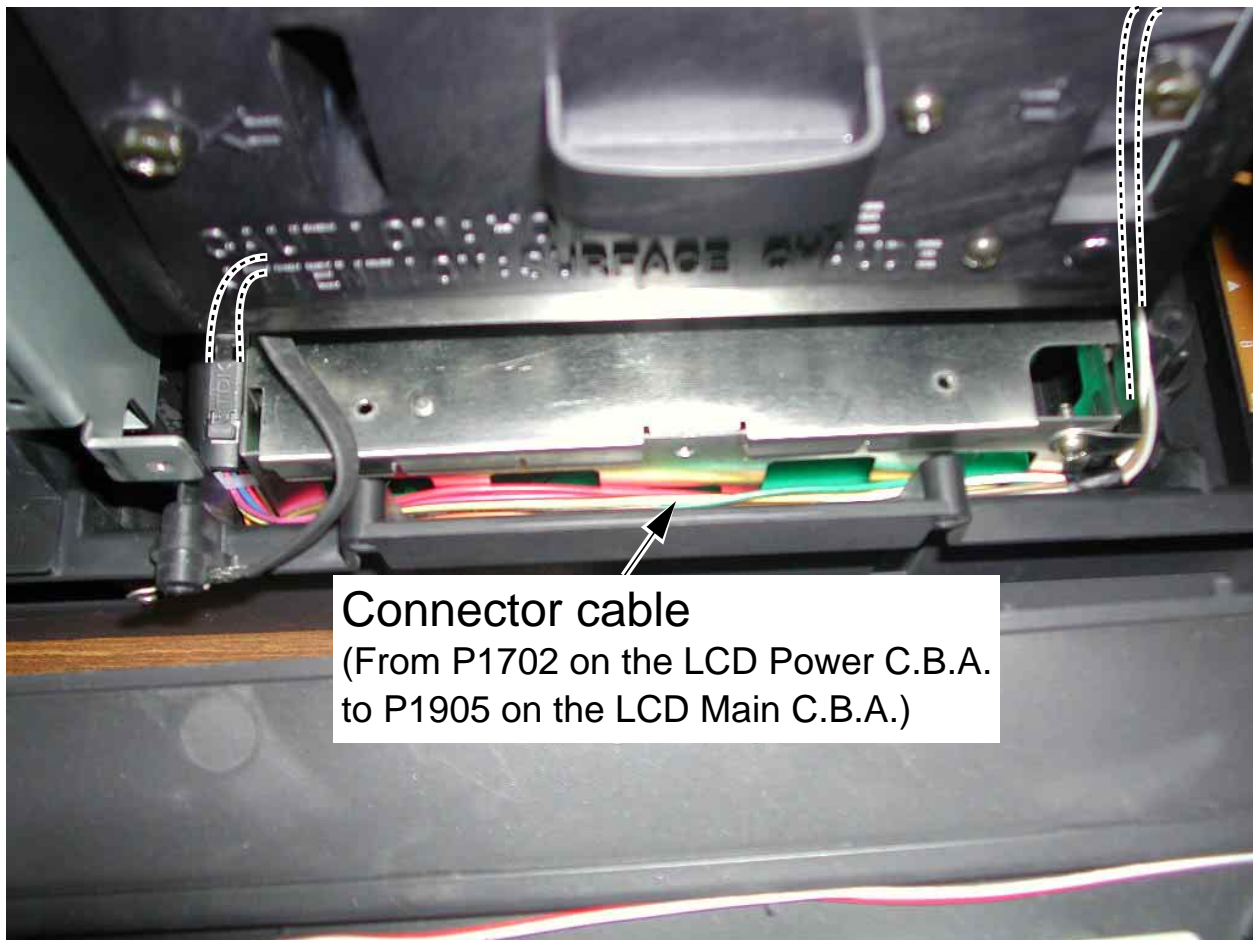


Fig. 9

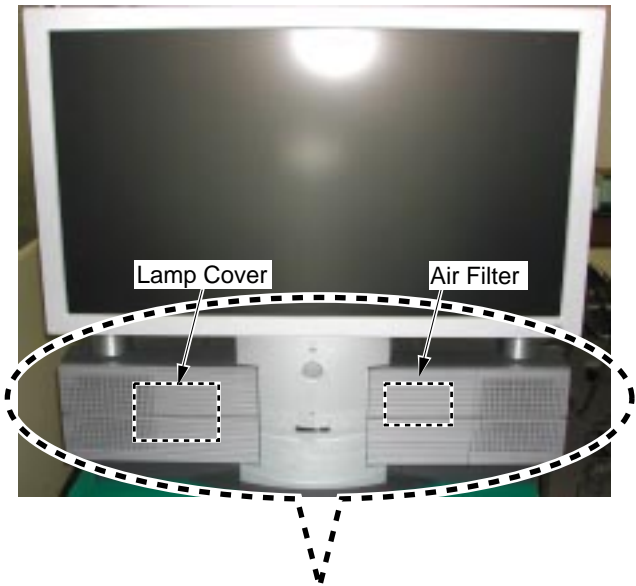


Connector cable
(From P1702 on the LCD Power C.B.A.
to P1905 on the LCD Main C.B.A.)

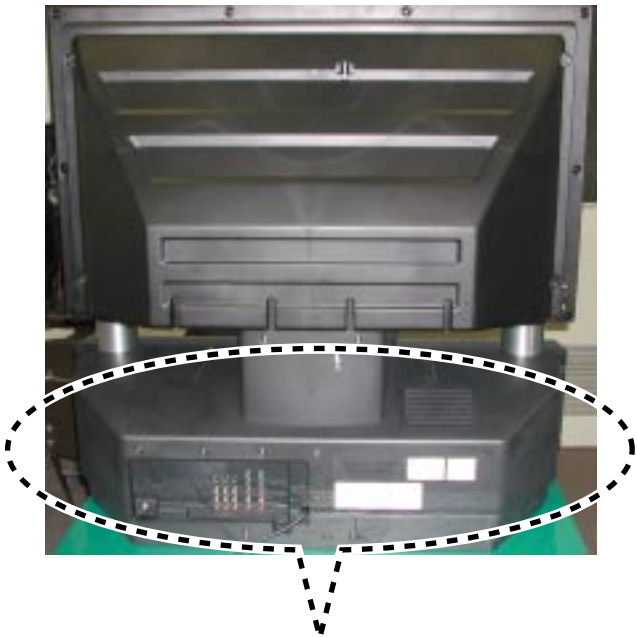
Fig. 9

Main Parts Location

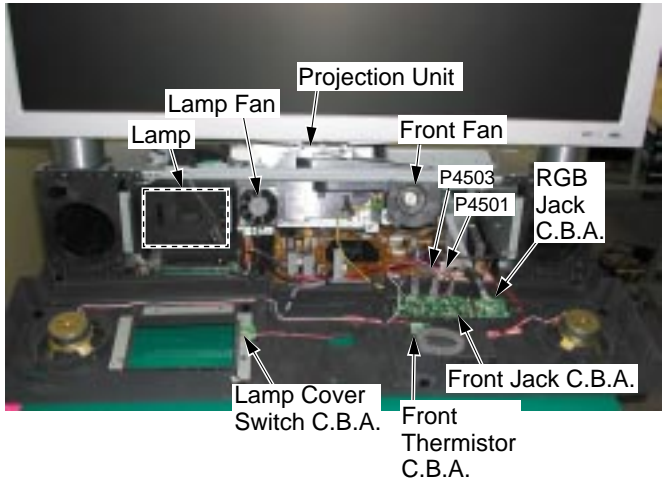
<Front View>



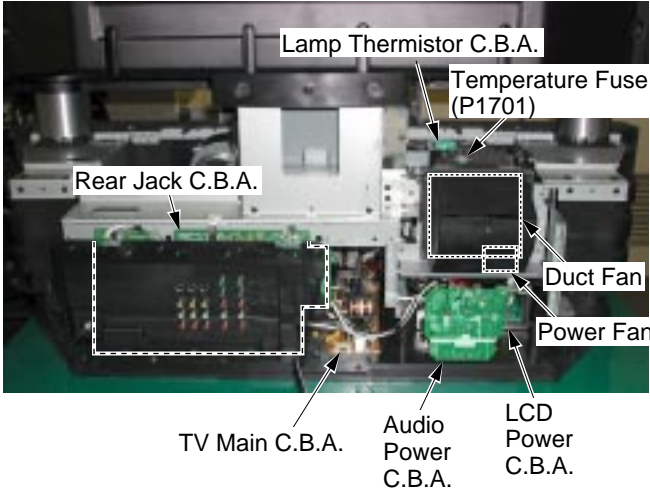
<Rear View>



<After opening the Base Front Panel Unit>



<After removing the Rear Cover>



Error Indication Information

Each LED indications facilitates finding the cause of the error. When an error is detected, each LED on the Center Panel will light up or flash when the AC Cord is plugged in. The detected error data will not be stored in the EEPROM. This data is cleared after the AC Cord is unplugged.

Error No.	Error Information	ERROR DESCRIPTION	POWER LED	TEMP LED	LAMP LED	OSD	LAMP OFF
1)	Front Fan stop or Lamp Fan stop	IC2301(pin12) detects the Front FAN stop or Lamp FAN stop, then indicates the error when the Front FAN or Lamp FAN is stopped.	flashes orange once every 5 seconds	-	-		○
2)	Lamp Cover open	IC2301(pin76) detects the Lamp Cover Unit condition (open or close), then indicates the error when the Lamp Cover Unit is open.	flashes orange twice every 5 seconds	-	-		○
3)	Temperature Sensor short or open	IC2301(pin74 and 75) detects open or short of the Temperature Sensor (R2911) on Front Thermistor C.B.A., then indicates the error when Temperature Sensor is open or shorted. (The error is not detected for 1 minute after Lamp ON.)	-	flashes once every 5 seconds	-		○
4)	Abnormal Temperature	IC2301(pin74 and 75) detects the temperature attached near the Front FAN by the Temperature Sensor (R2911) on Front Thermistor C.B.A., then indicates the error when the temperature becomes more than 43°C. (The error is not detected for 1 minute after Lamp ON.)	-	flashes twice every 5 seconds	-		○
5)	Power Ballast Error (abnormal Lamp voltage)	IC2301(pin11) detects the error of the Lamp, then indicates the error when the Lamp is short-circuit.	-	-	flashes twice every 5 seconds		○
6)	Power Ballast Error (abnormal temperature)	IC2301(pin11) detects the error of LCD Power C.B.A., then indicates the error when the temperature fuse (117°C) in LCD Power C.B.A. is open.	-	-	flashes 3 times every 5 seconds		○
7)	Power Ballast Error (other causes)	IC2301(pin11) detects the error of LCD Power C.B.A. and Lamp, then indicates the error when an inner malfunction of LCD Power C.B.A. occurs, the Lamp voltage becomes more than 130V or less than 30V, Lamp current becomes more than 5A, or the Lamp is cracked.	-	-	flashes 4 times every 5 seconds		○
8)	Abnormal Voltage on 16 V line of LCD Main C.B.A.	IC2301(pin48) detects +16V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +13V.	-	flashes once every 5 seconds	flashes once every 5 seconds		
9)	Abnormal Voltage on 14 V line of LCD Main C.B.A.	IC2301(pin47) detects +14V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +11V.	-	flashes twice every 5 seconds	flashes twice every 5 seconds		
10)	Abnormal Voltage on 7 V line of LCD Main C.B.A.	IC2301(pin45) detects +7V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +5.7V.	-	flashes 3 times every 5 seconds	flashes 3 times every 5 seconds		
11)	Abnormal Voltage on 3.3 V line of LCD Main C.B.A.	IC2301(pin44) detects +3.3V line voltage on LCD Main C.B.A., then indicates the error when the voltage becomes less than +2.5V.	-	flashes 4 times every 5 seconds	flashes 4 times every 5 seconds		
12)	Temperature Sensor short or open	IC6001(pin86 and 87) detects open or short of the Temperature Sensor (R2901) on Lamp Thermistor C.B.A., then indicates the error when Temperature Sensor is open or shorted. (The error is not detected for 4 minutes after Lamp ON.)	-	flashes 3 times every 5 seconds	-		○
13)	Abnormal Temperature	IC2301(pin74 and 75) detects the temperature attached near the Lamp by the Temperature Sensor (R2901) on Lamp Thermistor C.B.A., then indicates the error when the temperature becomes more than 60°C. (The error is not detected for 4 minutes after Lamp ON.)	-	flashes 4 times every 5 seconds	-		○
14)	Duct Fan stop	IC6001(pin85) detects the Duct FAN stop, then indicates the error when the Duct FAN is stopped.	flashes orange 3 times every 5 seconds	-	-		○
15)	Clogged air filter more than 90%	IC2301(pin82) detects the clogged air filter, then indicates the error when the air filter is clogged 90%.	-	flashes 5times every 5 seconds	-	○	○
16)	The failure of Lamp light up	IC2301 (pin11) detects the failure of light up processing of the Lamp, then the POWER LED is changed as follows. 1) POWER LED flashes green for 140 seconds (while turning on). 2) POWER LED flashes red for 60 seconds (while cooling). 3) POWER LED lights up red (standby). Note: If the Lamp will not light after attempting turning on the power 2 or 3 times, the Lamp, the LCD Power C.B.A. or the LCD Main C.B.A. may be defective.	flashes green for 140 seconds. ↓ flashing red for 60 seconds. ↓ light up red.				
17)	Request for Lamp Replacement	When accumulated operation time of the the Lamp reaches 5000 hours, OSD (replacing the Lamp) appears on the screen. Note: The Lamp time is stored in EEPROM (IC2305).	-	-	lights up	○	
18)	Request for Filter Cleaning	When accumulated operation time of the Air Filter reaches 400 hours, OSD (cleaning the Air Filter) appears on the screen. Note: The Filter time is stored in EEPROM (IC2305).	-	-	-	○	
—	Forced cooling	During forced cooling, this indication is indicated.	flashes red for 10 minutes	-	flashes 5 times every 5 seconds		

Note:

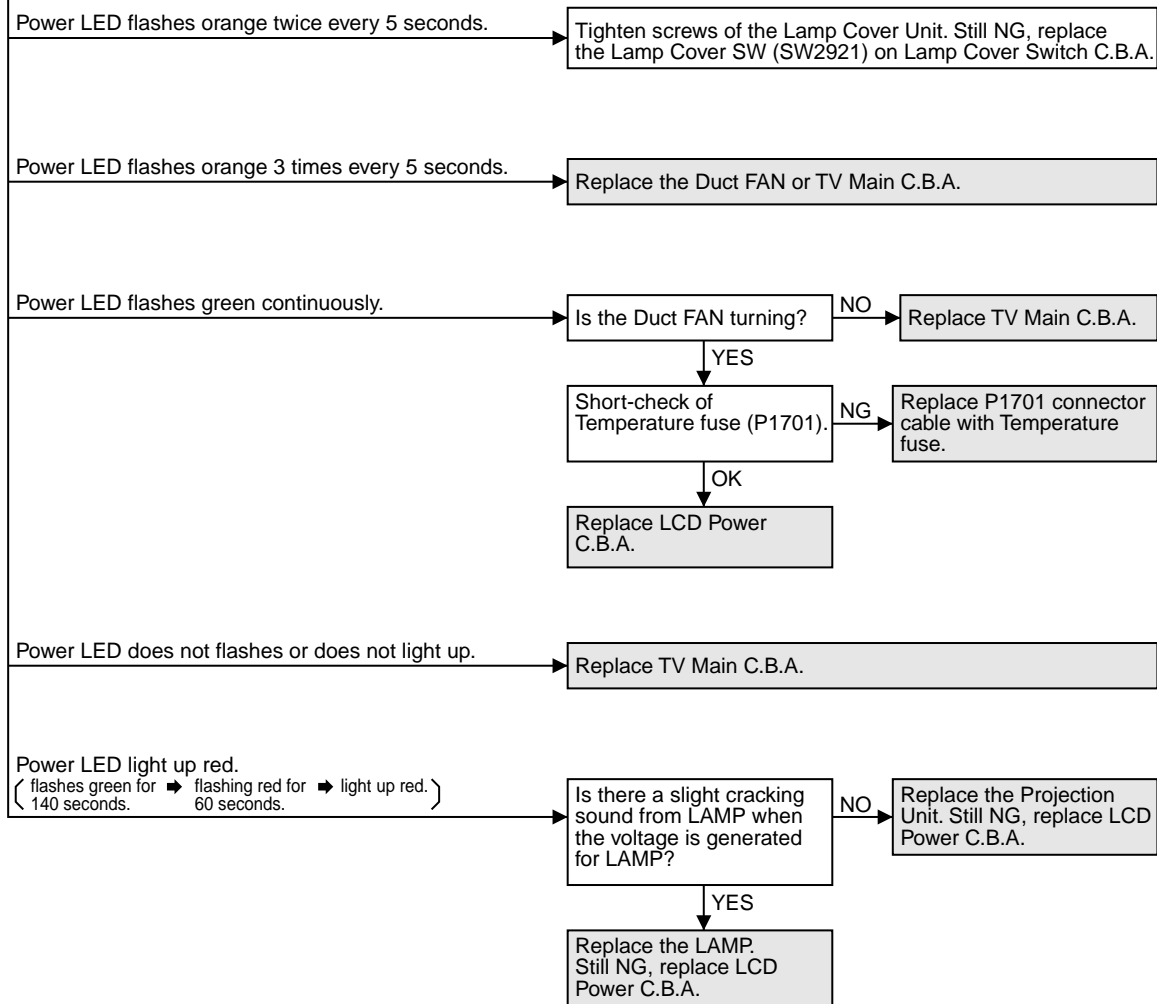
- When any of the above errors has occurred, the LED will flash as shown above every 5 seconds.
- When two or more errors have occurred at the same time, the LED will light up or flash as shown above, and then change to another every 5 seconds in turn.
- LAMP OFF: The LED will flash right after the Lamp goes off.
- Warning OSD appears when the Air Filter is clogged 90%, accumulated operation time of the Lamp reaches 5000 hours, or accumulated operation time of the Air Filter reaches 400 hours.
- IC2301 is mounted on LCD Main C.B.A. which includes in the Projection Unit.
- IC6001 is mounted on TV Main C.B.A.

How to solve the problem indicated by the Error Indication of LED

Error No.	Symptom	Problem	Possible Solution
1)	Lamp automatically turns off.	Cooling Fan (Front Fan and/or Lamp Fan) malfunction.	<div>Are the Front FAN and the Lamp FAN operating?</div> <div> <div>NO</div> <div>Only the Front FAN stops.</div> <div>Only the Lamp FAN stops.</div> </div> <div> <div>Replace LCD Power C.B.A. Still NG, replace the Projection Unit.</div> <div>Replace the Front Fan.</div> <div>Replace the Lamp Fan.</div> </div>
2)	Lamp automatically turns off or Lamp does not light up.	Misinstalled Lamp Cover Unit.	Tighten screws of the Lamp Cover Unit. Still NG, replace the LAMP Cover SW (SW2921) on Lamp Cover Switch C.B.A.
3)	Lamp automatically turns off.	The temperature sensor(R2911) on Front Thermistor C.B.A. attached near the Front Fan is short or open.	Replace the Temperature Sensor (R2911) on Front Thermistor C.B.A.
4)	Lamp automatically turns off.	1. Clogged air filter. 2. Blocked air intake. 3. The surrounding temperature of the place of use may be too high.	Cleaning the Air Filter.
5)	Lamp does not light up.	Lamp voltage is not correct due to short of the Lamp.	Replace the Lamp.
6)	Lamp automatically turns off due to abnormally high internal temperature.	Abnormal temperature rise.	Replace LCD Power C.B.A.
7)	Lamp automatically turns off or Lamp does not light up.	1. The Lamp voltage becomes more over 130V or less than 30V. 2. The Lamp current becomes more over 5A. 3. The Lamp is defective (crack.) 4. Other cause. Note: If the Lamp will not light up after attempting turning on the main power 2 or 3 times, the Lamp may be defective.	Replace the Lamp. Still NG, replace LCD Power C.B.A.
8)	White screen is displayed.	+16V line on LCD Main C.B.A. error. ↓ No output voltage for IC1901(+15.3V REG.) on LCD Main C.B.A. ↓ LCD Drive Circuit on LCD Main C.B.A. malfunction.	Replace the Projection Unit. Still NG, replace LCD Power C.B.A. Note: The Projection Unit includes LCD Main C.B.A.
9)	Front FAN and Lamp FAN are stopped.	+14V line on LCD Main C.B.A. error. ↓ No output voltage for IC1961(Drive for Front Fan) and IC1962(Drive for Lamp Fan.) on LCD Main C.B.A.	Replace LCD Power C.B.A. Still NG, replace the Projection Unit. Note: The Projection Unit includes LCD Main C.B.A.
10)	Abnormal picture. (OSD appears normally.)	+7V line on LCD Main C.B.A. error. ↓ No output voltage for IC2501(+3.3V REG.) and IC2705(+3.3V REG.) on LCD Main C.B.A. ↓ IC2502(Main A/D Converter) and IC2706(Sub A/D Converter) on LCD Main C.B.A. malfunction.	Replace the Projection Unit. Still NG, replace LCD Power C.B.A. Note: The Projection Unit includes LCD Main C.B.A.
11)	Abnormal picture. (OSD is also abnormal.)	+3.3V line on LCD Main C.B.A. error. ↓ IC9503(Timing Generator), IC9508(Sub Scaler), IC9510(OSD), etc on LCD Main C.B.A. malfunction.	Replace the Projection Unit. Still NG, replace LCD Power C.B.A. Note: The Projection Unit includes LCD Main C.B.A.
12)	Lamp automatically turns off.	The temperature sensor (R2901) on Lamp Thermistor C.B.A. attached on the Lamp house unit is short or open.	Replace the Temperature Sensor (R2901) on Lamp Thermistor C.B.A.
13)	Lamp automatically turns off.	1. Clogged air filter. 2. Blocked air intake. 3. The surrounding temperature of the place of use may be too high.	Cleaning the Air Filter.
14)	Lamp does not light up.	Cooling Fan (Duct Fan) malfunction.	Replace the Duct FAN. Still NG, replace TV Main C.B.A.
15)	OSD (Clogged Air Filter) appears on the screen.	Clogged air filter more over 90%.	Cleaning the Air Filter. Still NG, replace the Air Filter. Still NG, replace the Front FAN. Still NG, replace the Projection Unit. Note: The Projection Unit includes LCD Main C.B.A.
16)	Lamp does not light up after attempting turning on the POWER 2 or 3 times.	1. The Lamp is defective. 2. The Lamp has been out of life. 3. LCD Power C.B.A. is defective. 4. LCD Main C.B.A. is defective.	Replace the Lamp. Still NG, LCD Power C.B.A. Still NG, replace the Projection Unit. Note: The Projection Unit includes LCD Main C.B.A.
17)	OSD (Replacing the Lamp) appears on the screen.	Accumulated operation time of the Lamp reaches 5000 hours.	Replace the Lamp.
18)	OSD (Cleaning the Air Filter) appears on the screen.	Accumulated operation time of the Air Filter reaches 400 hours.	Cleaning the Air Filter.

Note:
Before performing the troubleshooting, confirm that all connector cables in the unit are connected to connectors correctly.

LAMP does not light up



Lamp automatically turns off

Power LED flashes orange once every 5 seconds.

Are the Front FAN and the Lamp FAN operating?

NO

Replace LCD Power C.B.A.
Still NG, replace the Projection Unit.

Only the Front FAN stops.

Replace the Front FAN.

Only the Lamp FAN stops.

Replace the Lamp FAN.

TEMP LED flashes once every 5 seconds.

Replace the Temperature Sensor (R2911) on Front Thermistor C.B.A.

TEMP LED flashes 3 times every 5 seconds.

Replace the Temperature Sensor (R2901) on Lamp Thermistor C.B.A.

LAMP LED flashes twice every 5 seconds.

Replace the LAMP.

LAMP LED flashes 3 times every 5 seconds.

Replace LCD Power C.B.A.

LAMP LED flashes 4 times every 5 seconds.

Replace the LAMP. Still NG, replace LCD Power C.B.A.

TEMP LED flashes 5 times every 5 seconds.

Cleaning the Air Filter. Still NG, replace the Air Filter.
Still NG, replace the Projection Unit.

TEMP LED flashes twice every 5 seconds.

Cleaning the Air Filter.

TEMP LED flashes 4 times every 5 seconds.

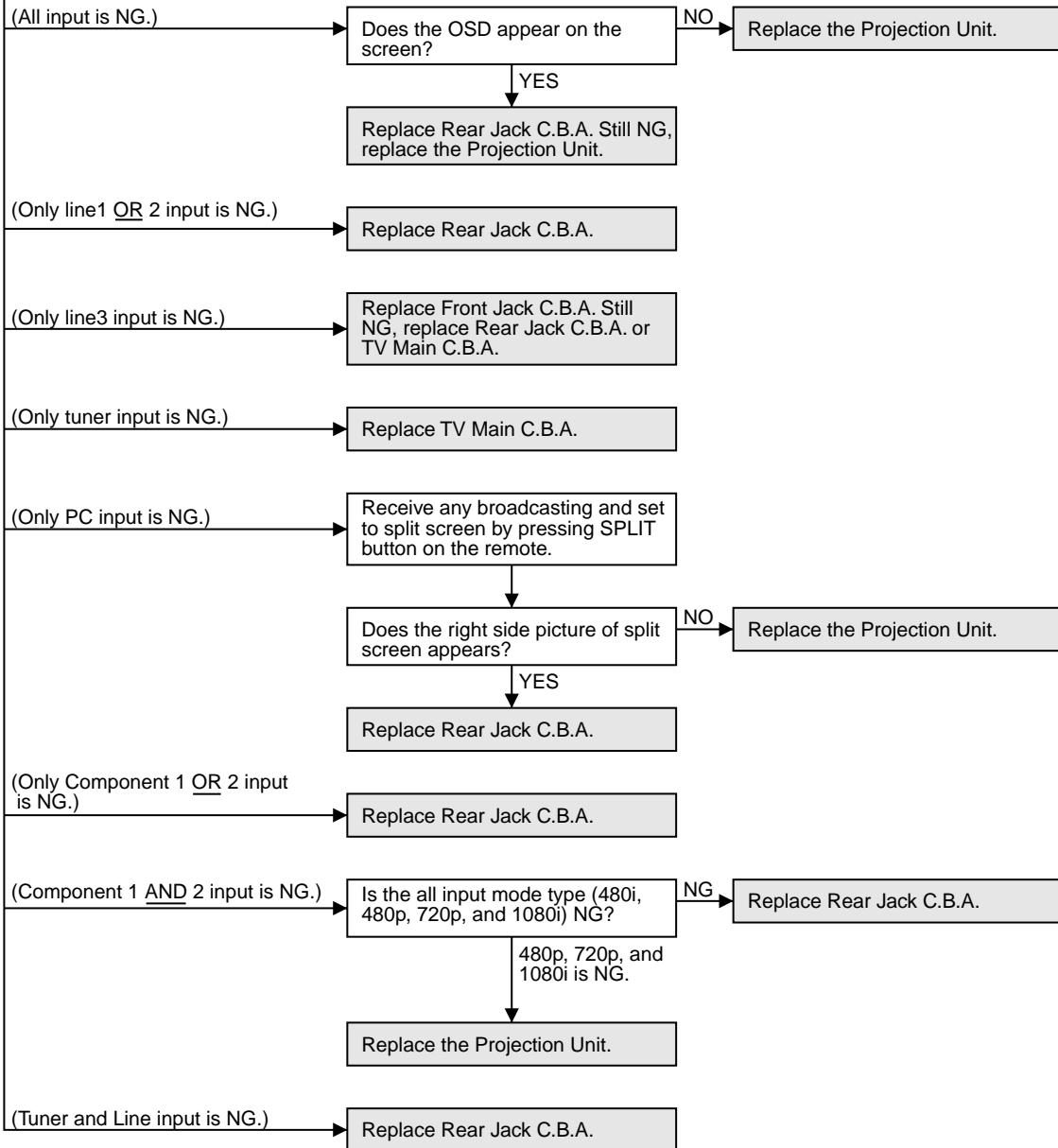
Cleaning the Air Filter.

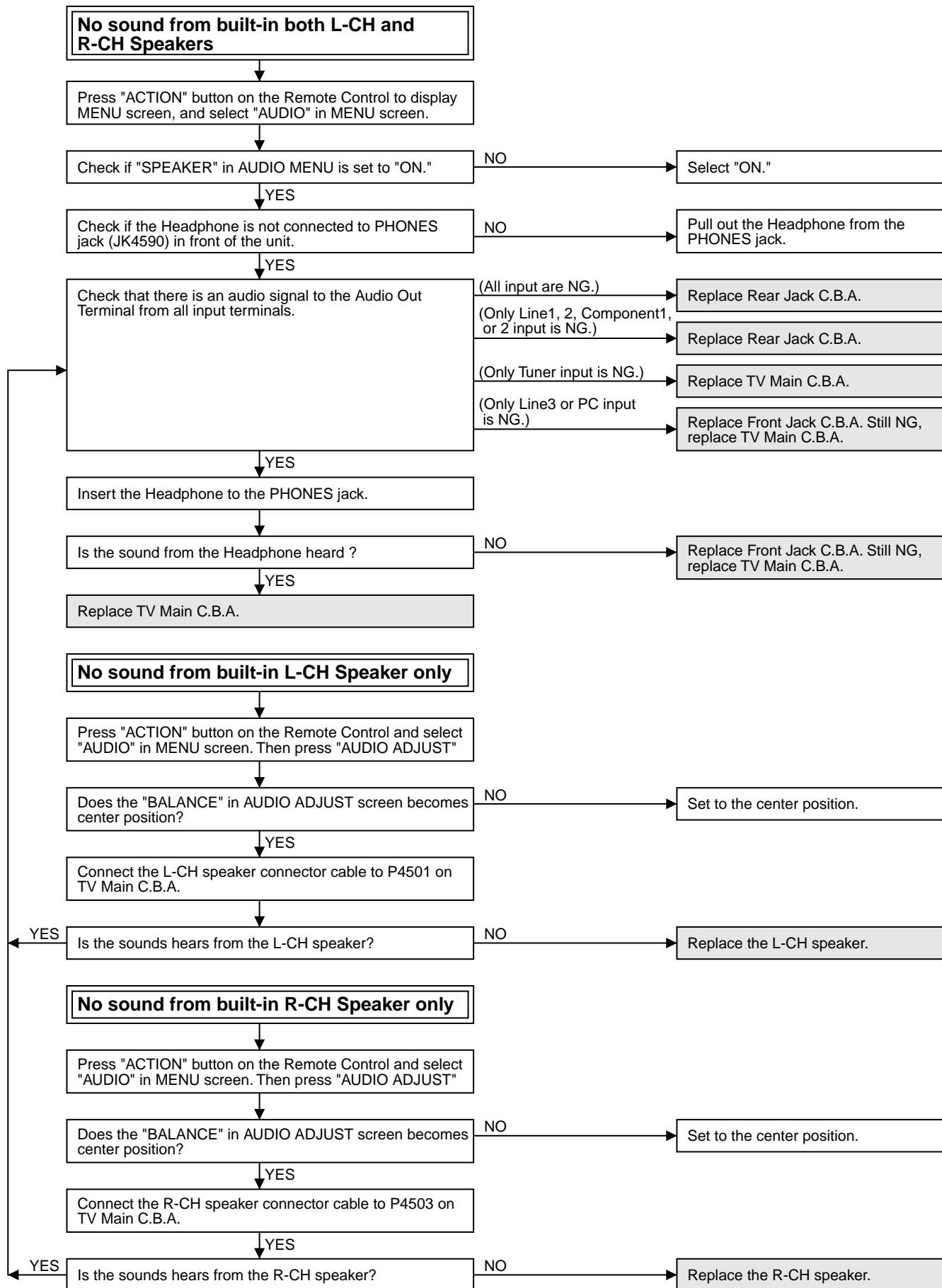
No picture or abnormal picture

Check that there is no picture or abnormal picture on the screen from all input terminals.

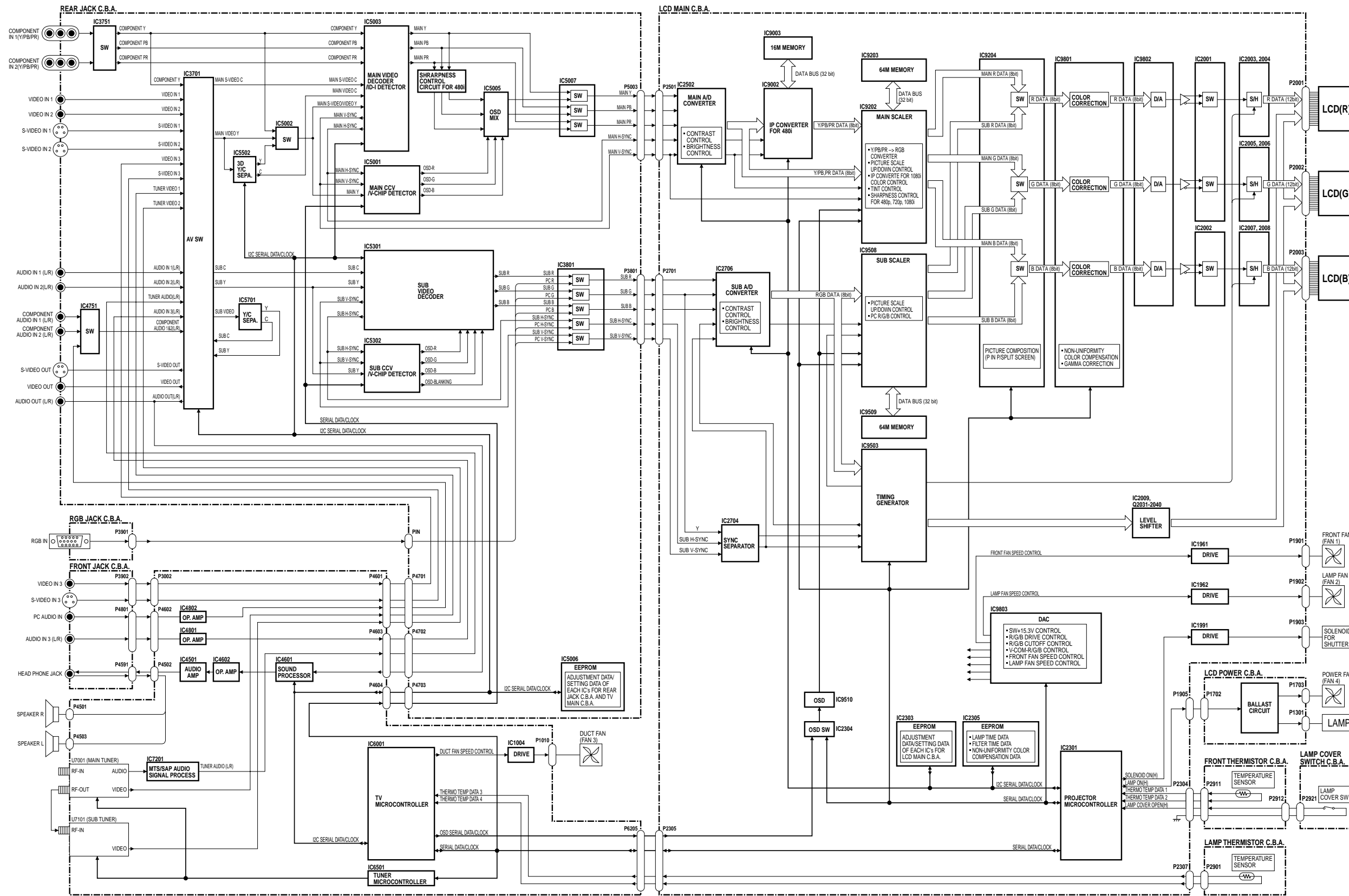
ABNORMAL PICTURE:

- No Color Picture (Black and White picture)
- Abnormal Color Picture
- No Synchronization Picture
- Dark Picture



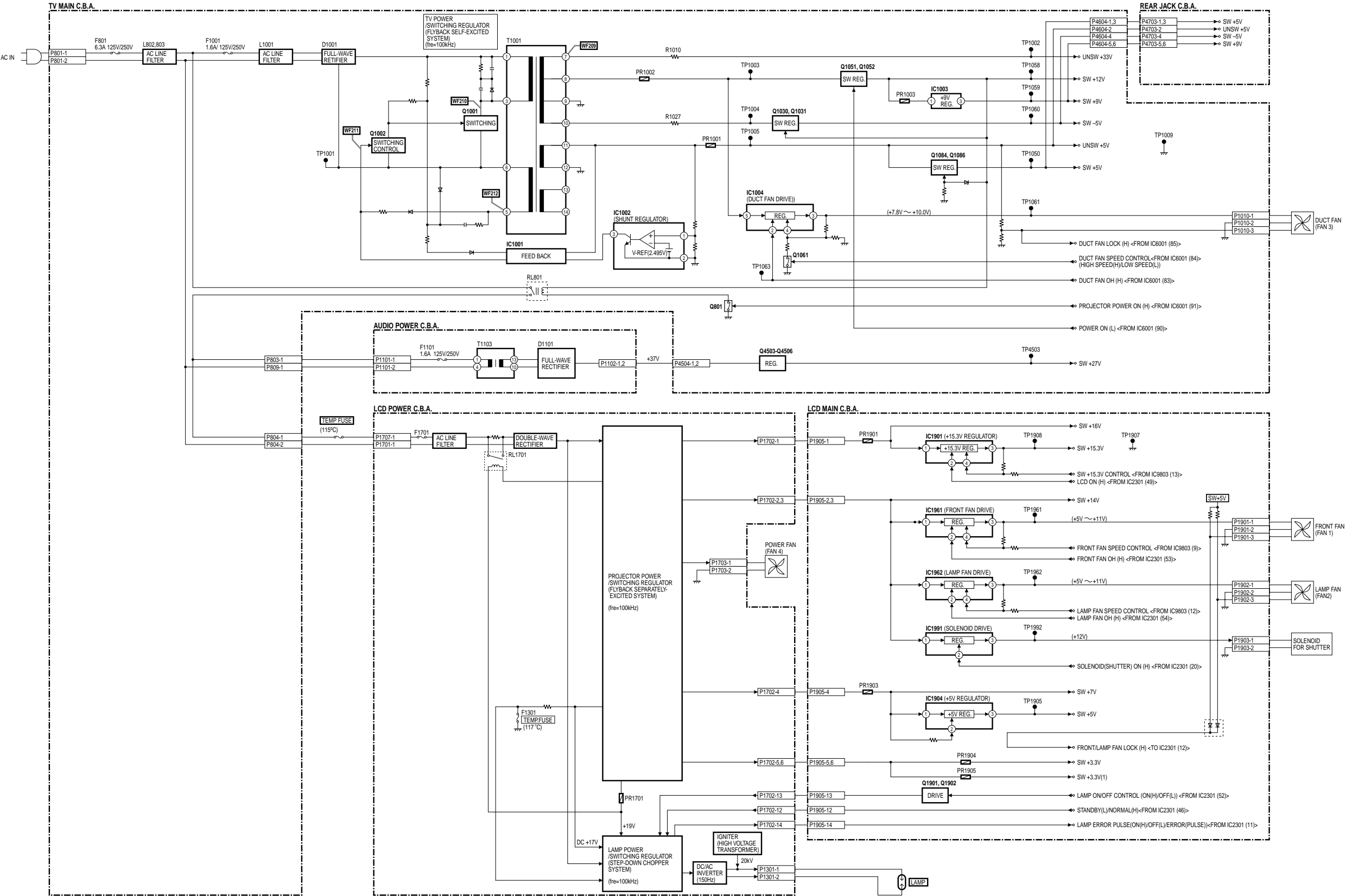


OVERALL BLOCK DIAGRAM



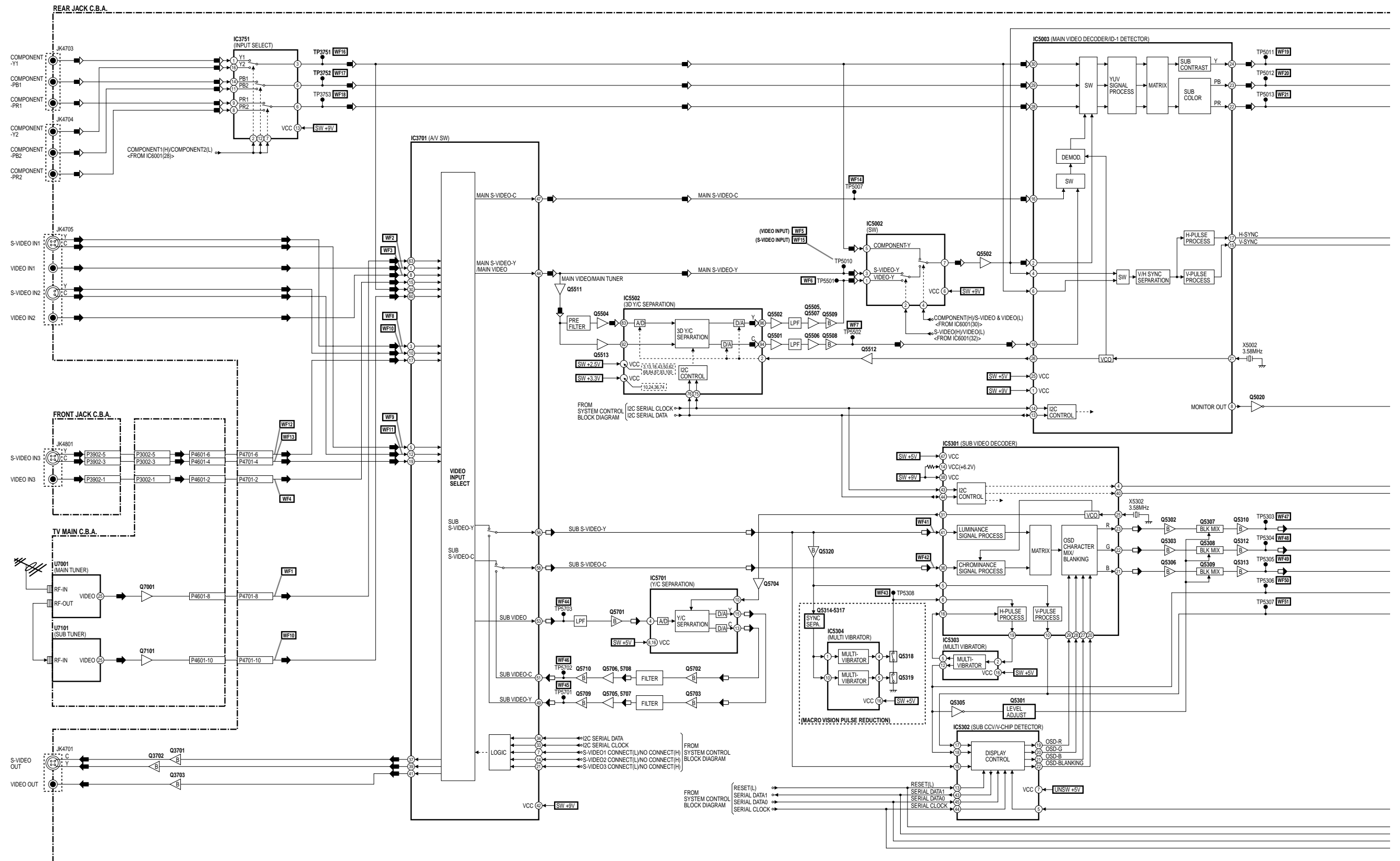
OVERALL BLOCK DIAGRAM
PT-40LC12/PT-45LC12

POWER SUPPLY BLOCK DIAGRAM



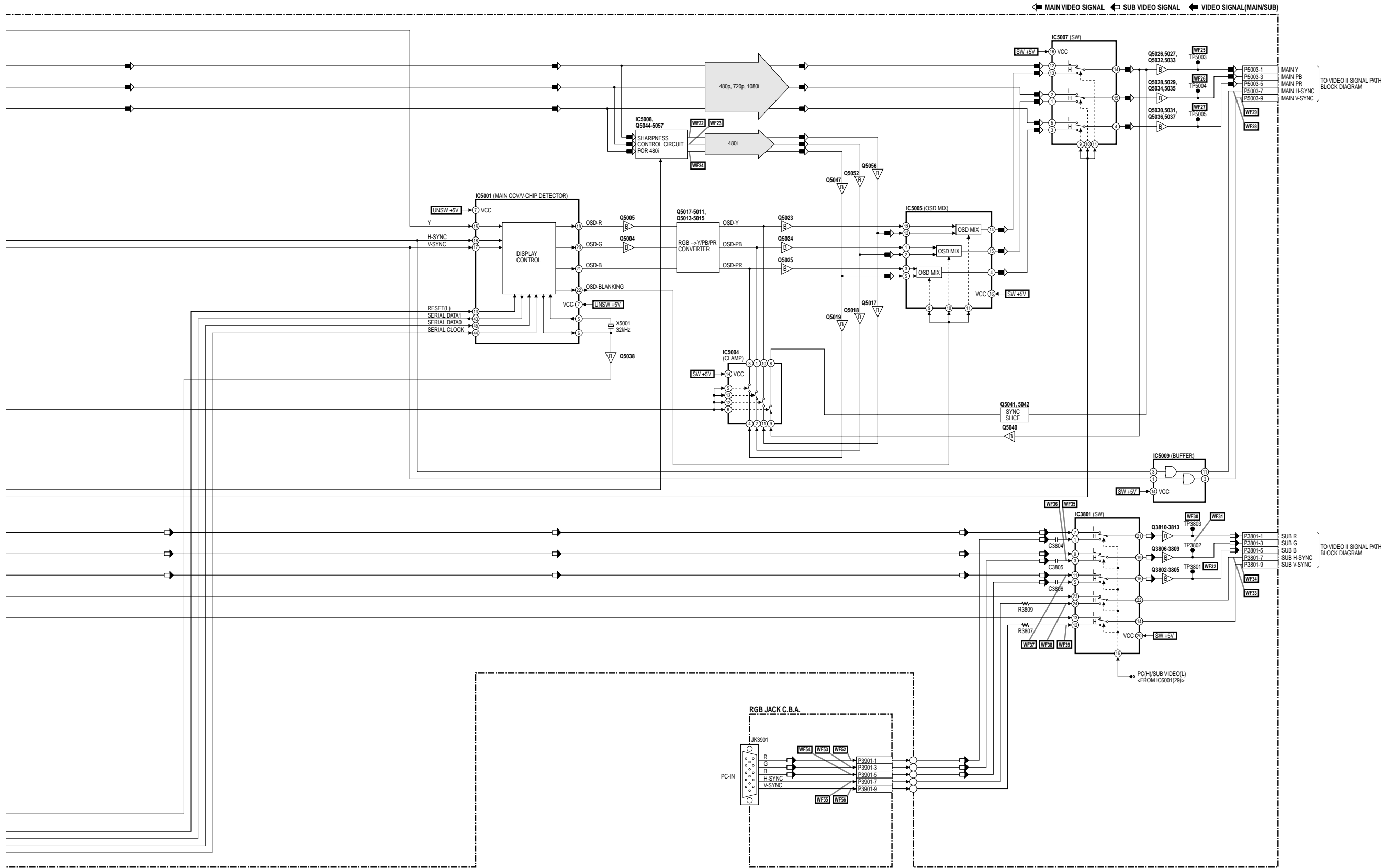
POWER SUPPLY BLOCK DIAGRAM
PT-40LC12/PT-45LC12

VIDEO SIGNAL PATH I BLOCK DIAGRAM (1/2)



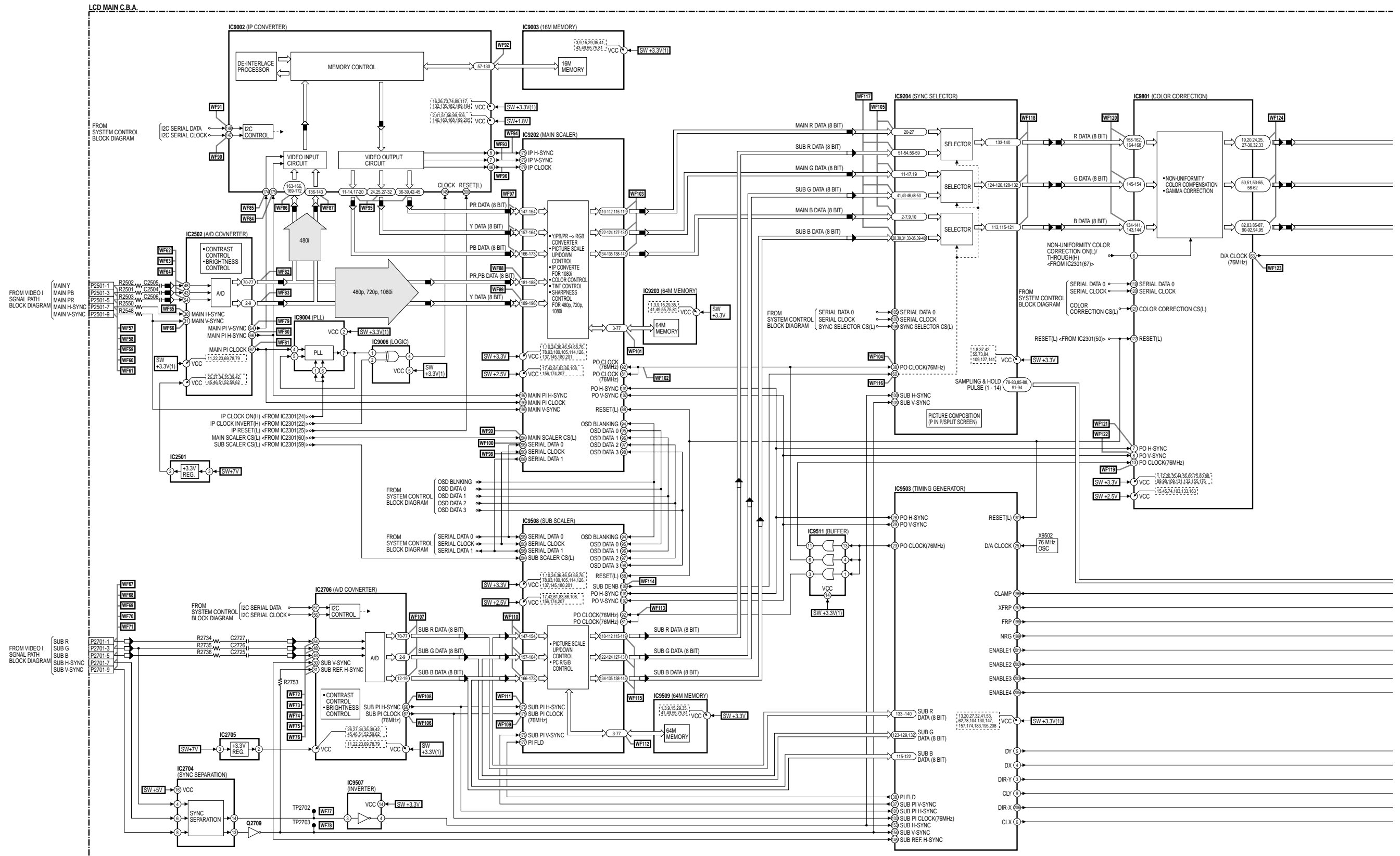
VIDEO SIGNAL PATH I BLOCK DIAGRAM PT-40LC12/PT-45LC12

VIDEO SIGNAL PATH I BLOCK DIAGRAM (2/2)



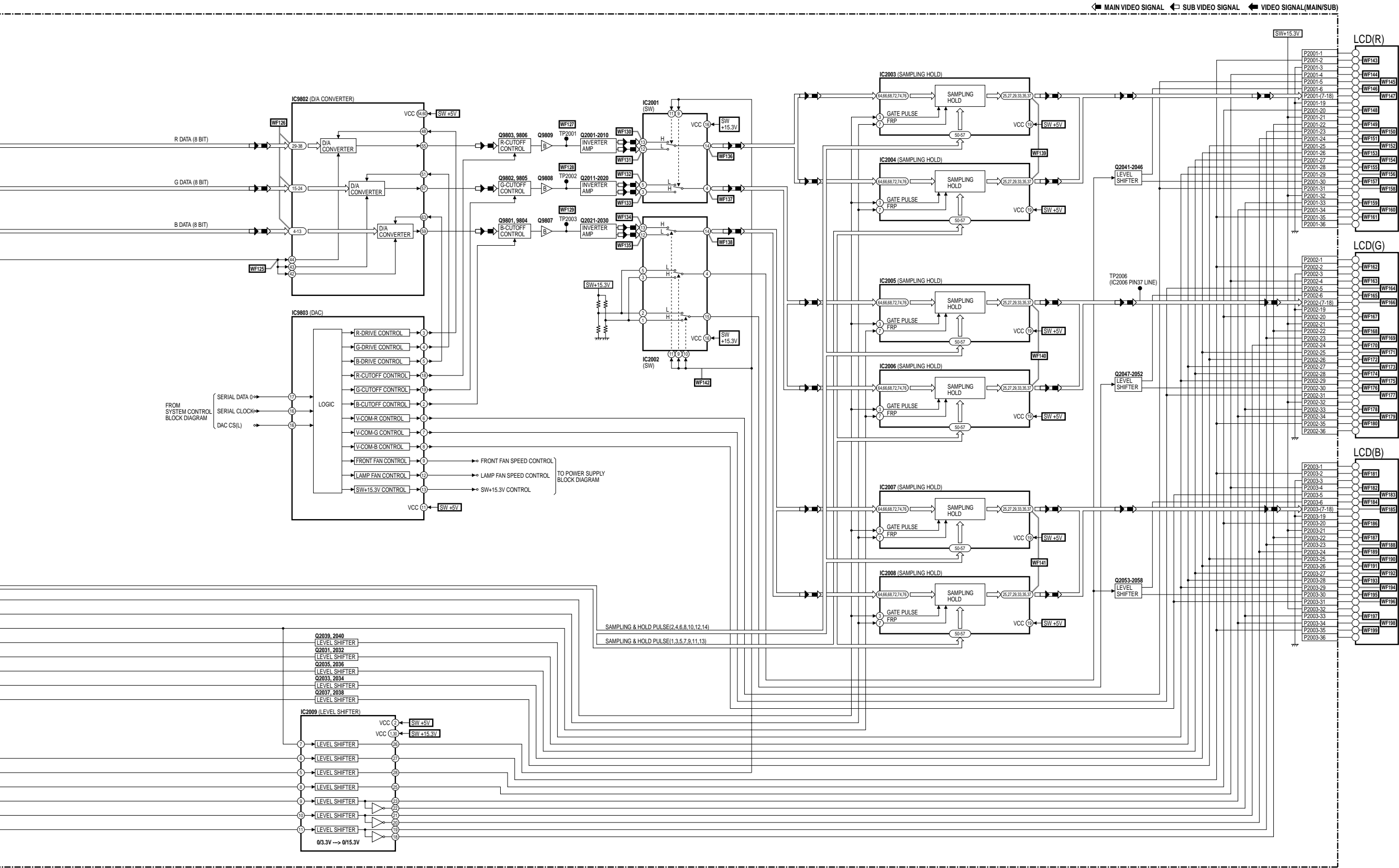
VIDEO SIGNAL PATH I BLOCK DIAGRAM
PT-40LC12/PT-45LC12

VIDEO SIGNAL PATH II BLOCK DIAGRAM (1/2)

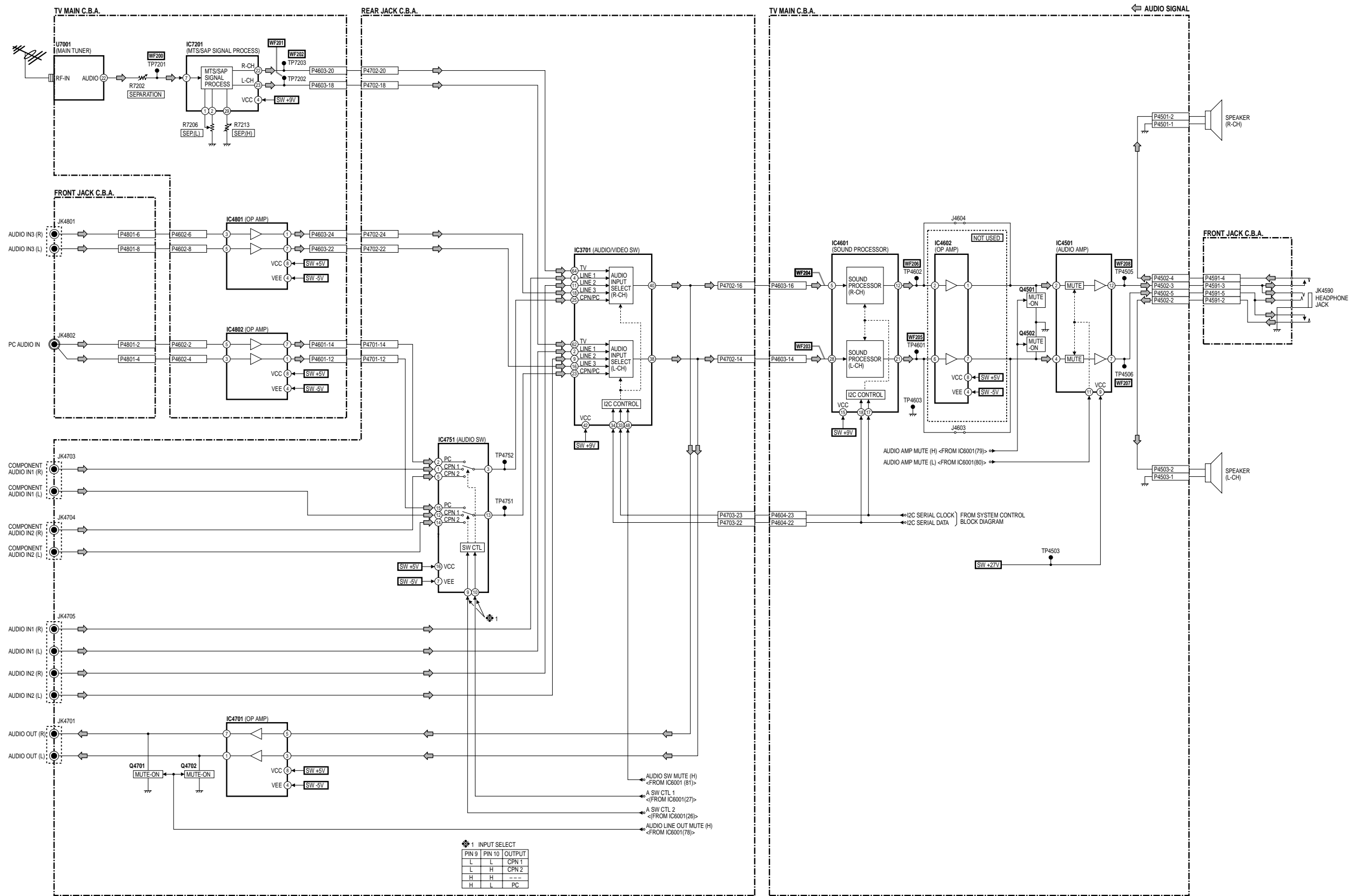


VIDEO SIGNAL PATH II BLOCK DIAGRAM PT-40LC12/PT-45LC12

VIDEO SIGNAL PATH II BLOCK DIAGRAM (2/2)

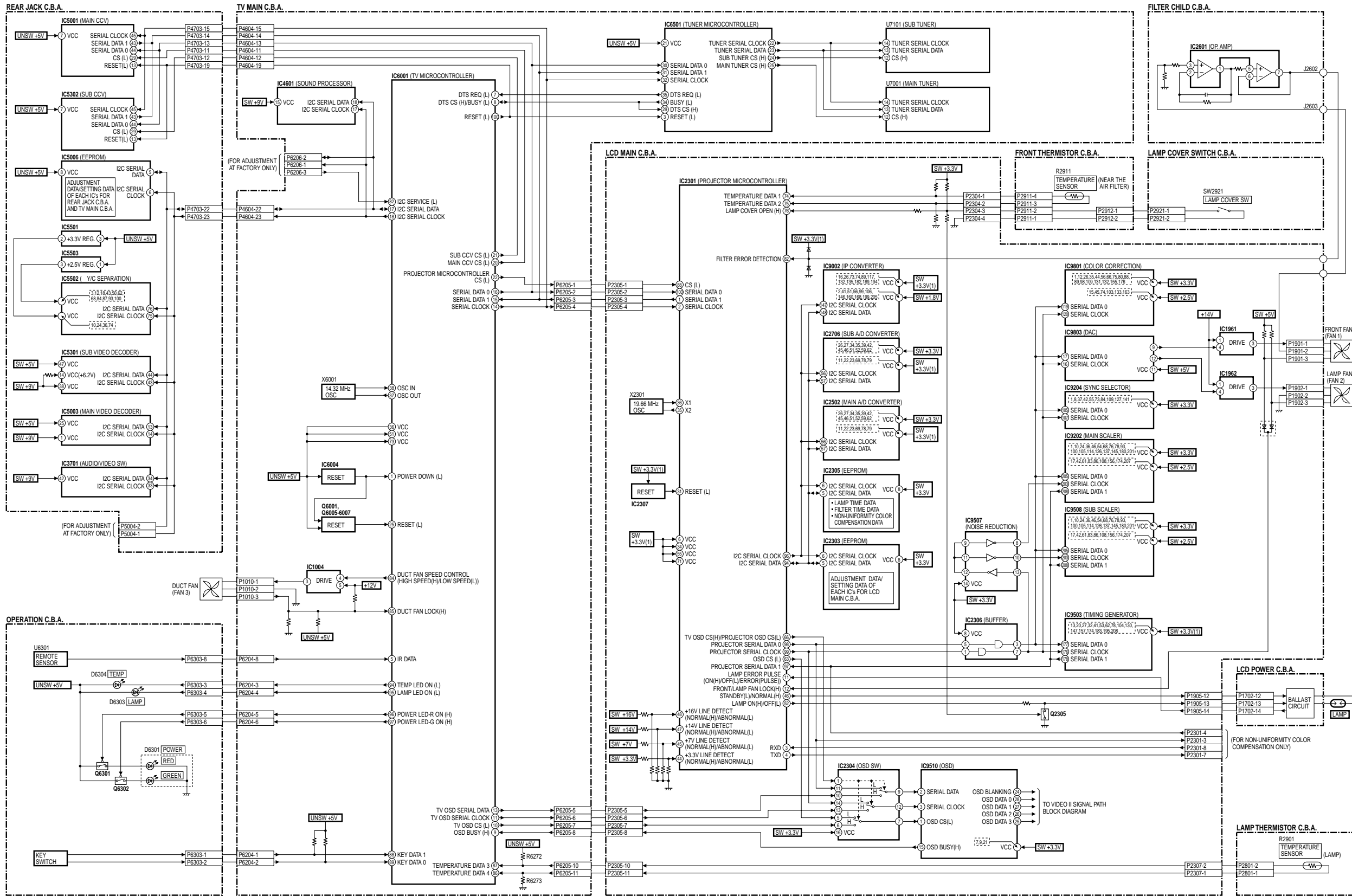


AUDIO SIGNAL PATH BLOCK DIAGRAM



AUDIO SIGNAL PATH BLOCK DIAGRAM
PT-40LC12/PT-45LC12

SYSTEM CONTROL BLOCK DIAGRAM



SYSTEM CONTROL BLOCK DIAGRAM
PT-40LC12/PT-45LC12

OPTICAL BLOCK DIAGRAM

